AIWA®

S/M Cord No. 86-008 W
DATE OF ISSUE 3/1986-Z

SERVICE MANUAL

CARRYING COMPONENT SYSTEM

MODEL NO.

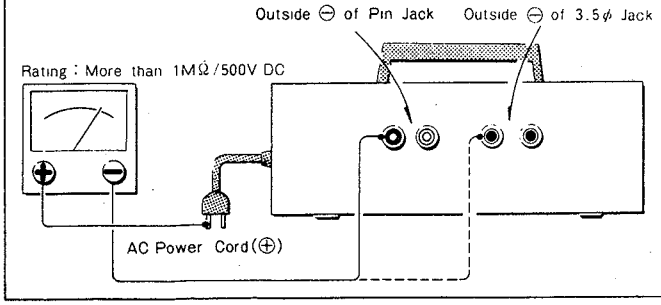
CA-25

TYPE. HS,HB,HUB,UB,CB,ES,EB,EWR, KS,KB,GS,GB,ZS,ZB,ZWR

Follow the instructions carefully, which will allow the user to optimise the products' performance and give many years of serivce.

1. **No scratch and melting shall be made to covered lead-wires of an a.c. primary circuit including mains leads.**
2. **No illegibility shall be given to the specification plate, the caution labels, the fuse labels and others.**
3. **When, on pattern sides of circuit boards, additional repair-parts have been made up, the parts shall be firmly glued to circuit boards or other components, unless the parts can be attached firmly.**
4. **The following matters shall be maintained as they are, when repairing.**
   1) Soldering of lead-wire ends
      * Care should be taken of the space distance in an a.c. primary circuit as well as soldering.
   2) Wiring and holding of lead-wires with wire-clips and binders
   3) Materials of lead-wires
      * e.g.; For UL models, lead-wires to be used shall be approved or accepted by the UL.
   4) Location of all kinds of insulators
   5) Setting of voltage selector switch
      * Set the Voltage Selector Switch to 240V, 220V, or 120V, According to your Local Voltage.
5. **After repaired, the insulation resistance or leakage current shall be measured with 500 ± 5V D.C and shall be not less than 1MΩ.**

Measuring Point



6. **General instructions for mechanism repair**
   1) Lubricants been stained the surfaces of transmitting portion of the belts, idlers, capstan and pinch roller shall be removed, because slippery and faulty tape travel shall be caused.
   2) When oiling, only one or two drops shall be applied so as not to run over and be dispersed. Note should be taken of the metal fitting for the capstan and rotating portions of the idlers and pinch roller, especially.
   3) E-rings and poly slider washers shall be replaced with new ones, if once those have been removed. – No re-utilization due to unreliability.
   4) Regular spare-parts shall always be used for repair, because using irregular parts and tampering with the products shall cause deterioration, mulfunction and damage.

SPECIFICATIONS

Type	Stereo multiband radio cassette recorder
Power source	Batteries, DC 13.5 V (R20P, D or SUM-1×9) **CA-25H** AC 110—120 V/220—240 V (switchable), 50—60 Hz **CA-25U** AC 120 V/220—240 V (switchable), 50—60 Hz **CA-25C** AC 120 V, 60 Hz **CA-25G** AC 120 V/240 V (switchable), 50—60 Hz **CA-25E,Z** AC 110—120 V/220—240 V (switchable), 50—60 Hz **CA-25K** AC 120 V/240V (switchable), 50—60 Hz
Output	16 W maximum DC (8W + 8W) **CA-25U FTC Rule** 3 watts per channel, Min. RMS at 3.2 ohms, from 200 Hz to 10 kHz, with no more than 10% Total Harmonic Distortion.
Power consumption	**CA-25H:** 24W **CA-25U:** 15W **CA-25C:** 19W **CA-25G:** 24W **CA-25E,Z:** 22W **CA-25K:** 24W

Tape Recorder Section

Tape speed	4.8 cm/sec. (1-7/8 ips)
Recording system	AC bias
Erasing system	Magnet erase
Recording time	60 minutes (C-60 Compact cassette, both directions)
Frequency response	NORMAL tape: 40—12,500 Hz CrO_2 tape: 40—14,000 Hz METAL tape: 40—16,000 Hz
Signal-to-noise ratio	52dB (Normal Tape)

Radio Section

Frequency ranges	**CA-25H, G** FM: 88—108 MHz MW: 530—1,605 kHz SW_1: 2.3—7.0 MHz SW_2: 7.0—22 MHz **CA-25U, C** FM: 88—108 MHz AM: 530—1,605 kHz **CA-25E,K,Z** FM: 87.5—108 MHz SW: 5.9—18 MHz MW: 530—1,605 kHz LW: 150—285 kHz
Antennas	**CA-25H, G** Whip antenna for FM and SW_2 Ferrite bar antenna for MW and SW_1 **CA-25U, C** Whip antenna for FM Ferrite bar antenna for AM **CA-25E,K,Z** Whip antenna for FM and SW Ferrite bar antenna for MW and LW Extenal antenna terminals for FM (except Z model)

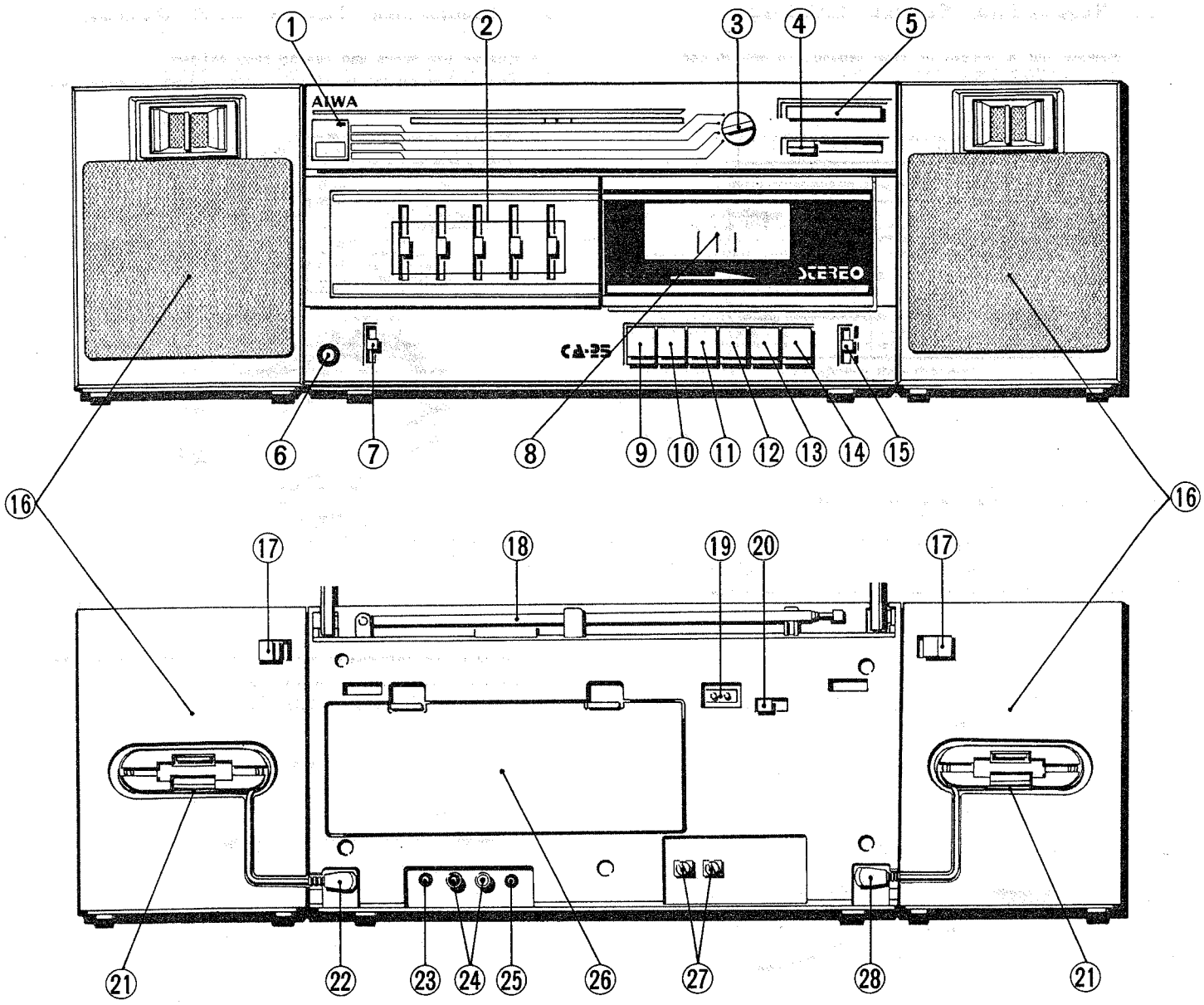
Speaker Section

Type	2-way open baffle type
Speaker	Woofer 100 mm cone type Tweeter 20 mm ceramic type
Impedance	3.2 ohm
Allowable maximum Input	5.3W

Dimensions(W×H×D)	580×176×151 mm (22-7/8"×7"×6")
Weight	4 kg (8.8lbs)
Accessories	AC power cord ×1

- Design and specifications are subject to change without notice.

DESIGNATION OF CONTROLS



① Operate/Battery indicator (OPE/BATT)
② GRAPHIC EQUALIZER controls
③ BAND selector switch (except U,C model)
④ VOLUME control knob
⑤ TUNING knob
⑥ PHONES jack
⑦ FM MODE switch
TAPE selector switch
Beat noise cut-off switch (OSC)
⑧ Cassette compartment
⑨ RECORD button
⑩ REW button
⑪ PLAY button
⑫ F FWD button
⑬ STOP/EJECT button
⑭ PAUSE button
⑮ FUNCTION switch
⑯ Loudspeaker
⑰ Speaker release knob
⑱ Whip antenna
⑲ AC jack
⑳ Voltage selector switch (AC VOLTAGE)
(except C model)
㉑ Speaker cords
㉒ Right speaker jack (EXT SPEAKER R)
㉓ Microphone jack (MIC)
㉔ LINE IN jack
㉕ PLAYER SYNC jack
㉖ Battery compartment lid
㉗ FM external antenna terminals
(EXT ANT/FM 300 Ω)
㉘ Left speaker jack (EXT SPEAKER L)

DISASSEMBLY INSTRUCTIONS

1. Removing Front Cabinet

1) Remove the 6 screws of rear cabinet to detach the front cabinet. (See Figure－1)

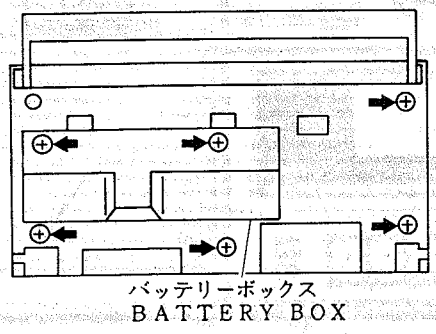


Fig. 1

2. Removing Main C.B

1) Remove the 2 knobs. (FUNCTION, FM MODE)
2) Remove the 2 hooks of circuit board and pull out the main circuit board in the direction of the arrow. (See Figure－2)

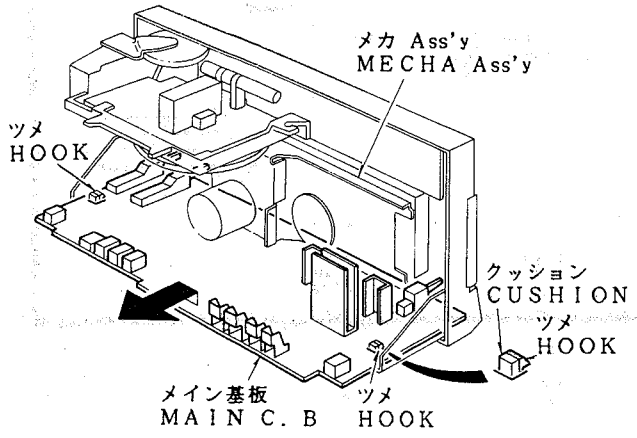


Fig. 2

3. Removing Mechanism Ass'y

1) Remove the 3 screws and open the cassette lid to detach the mechanism ass'y. (See Figure－3)

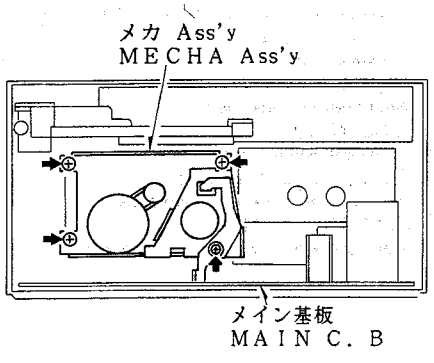


Fig. 3

4. Removing Tuner C.B Block

1) Remove the screw and tuning knob holder.
2) Remove the washer and tuning knob. (See Figure－4)

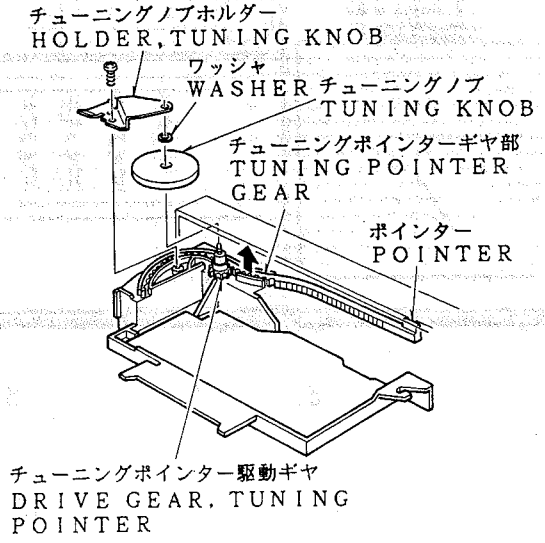


Fig. 4

3) Release the engagement between the tuning pointer gear and the tuning pointer drive gear.
4) Remove the 2 screws. (See Figure－5)

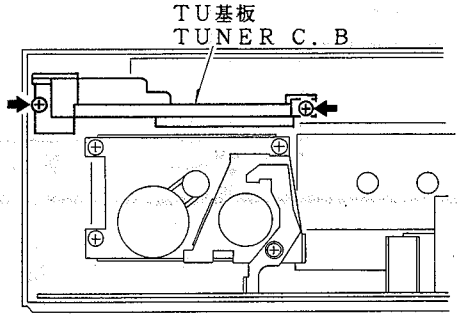


Fig. 5

5. Removing LED C.B

1) Remove the 5 hooks of circuit board. (See Figure－6)

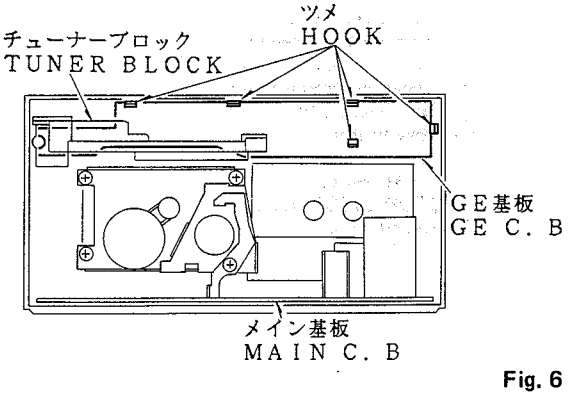


Fig. 6

6. Removing Tuner C.B

1) Remove the 3 screws. (See Figure－7)

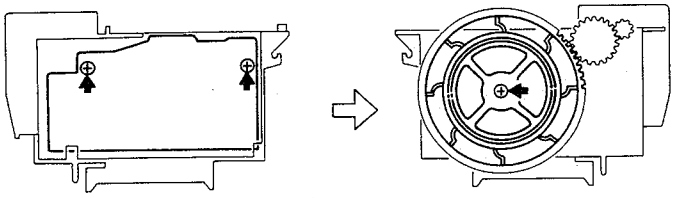


Fig. 7

7. Removing G.E C.B

1) Remove the 2 screws. (See Figure－8)

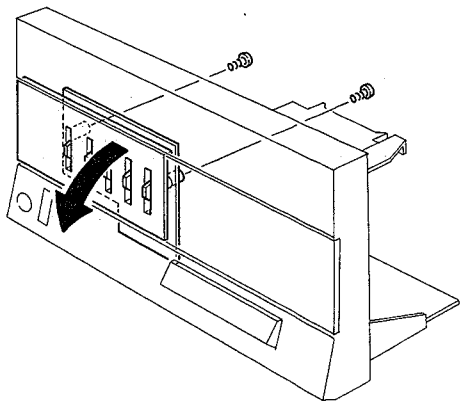


Fig. 8

Notes:

1. Tuning pointer indication position
   1) Set the tuning pointer to the position shown in the figure.
   2) Engage the rack section of the tuning pointer with the drive gear. Check that the tip of the tuning pointer is placed within the range shown in the figure. (See Figure－9)

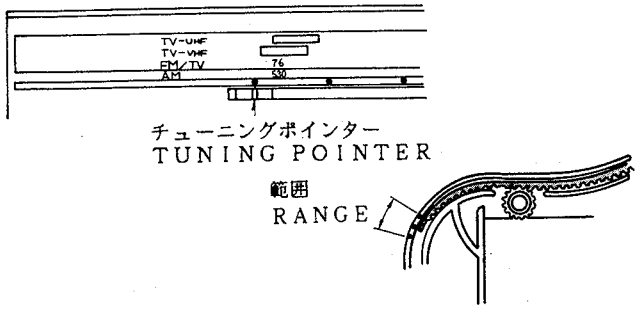


Fig. 9

2. Connection point of external antenna leads.

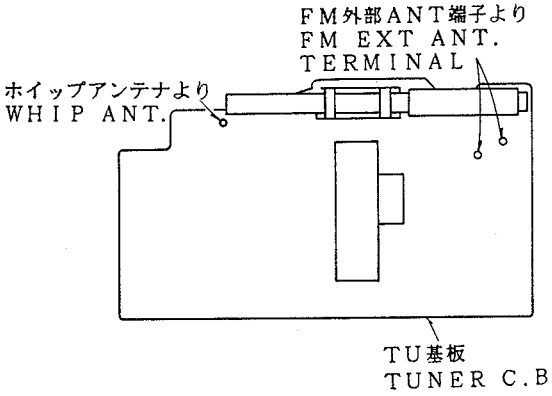


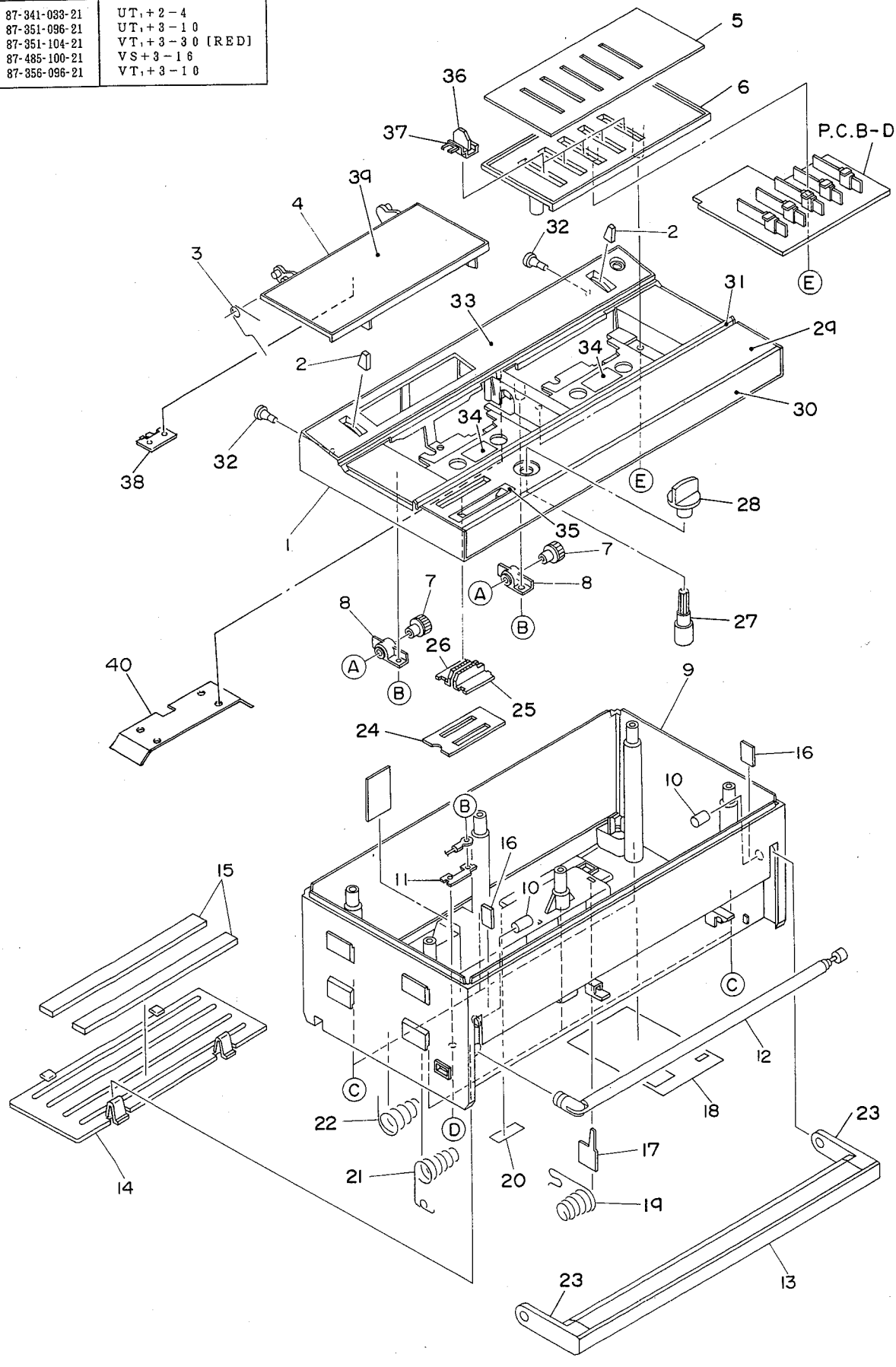
Fig. 10

☆ **MEMO** ☆

☆ **MEMO** ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆

EXPLODED VIEW-1

Ref. No.	Part No.	Description
A	87-341-033-21	UT,+2-4
B	87-351-096-21	UT,+3-10
C	87-351-104-21	VT,+3-30 [RED]
D	87-485-100-21	VS+3-16
E	87-356-096-21	VT,+3-10



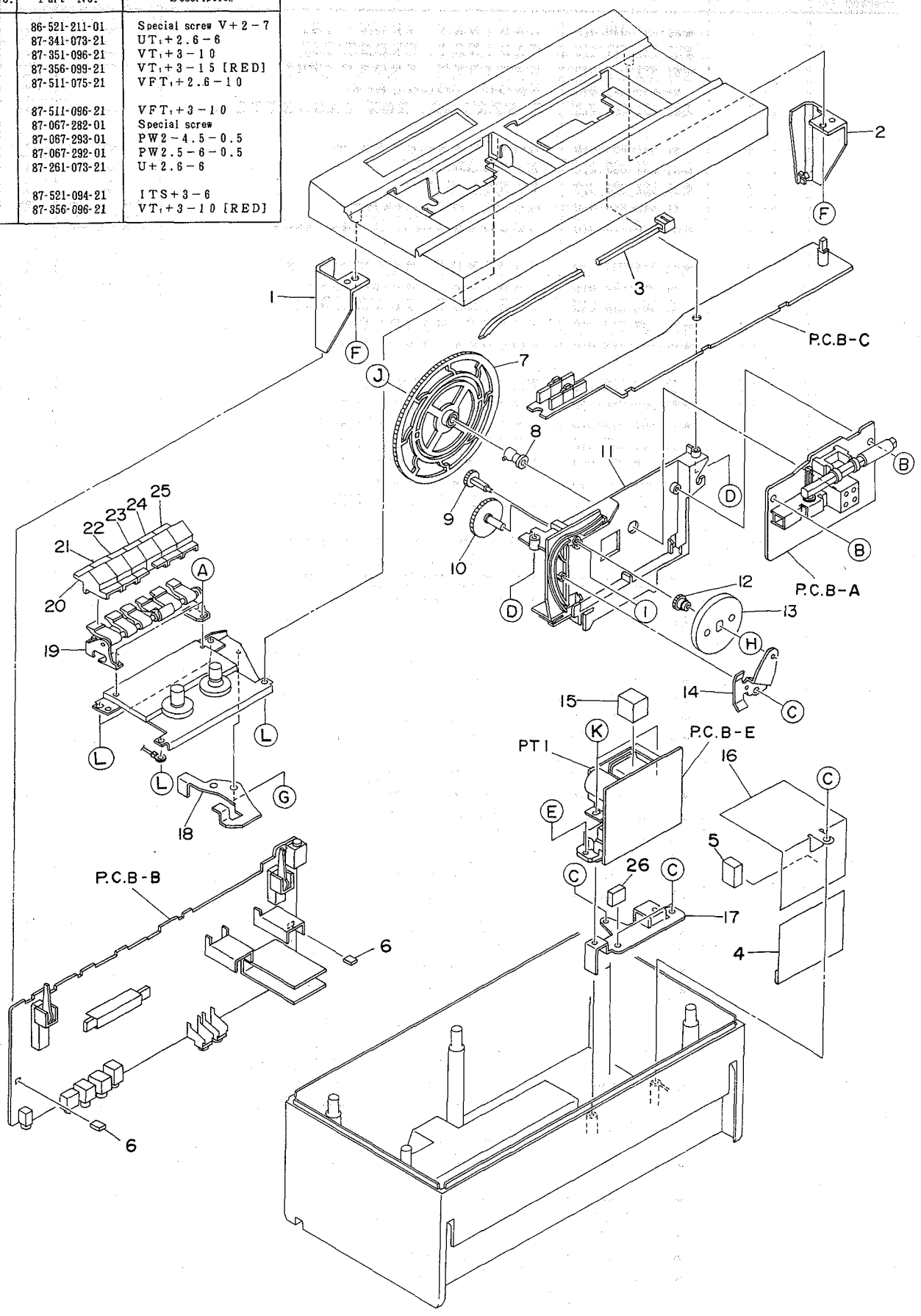
MECHANICAL PARTS LIST

- ※-mark in this part list shows exclusive part.
- ★-mark means less required items availabilities may be limited.
- No avalilability part is warked with- - -in Part No. list.
- [B]=BLACK,[S]=SILVER,[WR]=WINERED

Part No. changed to	Ref. No.	Part No.	Description	Common Model	Q'ty
	1-1	★81-561-046-019	CABINET, FRONT [B]	※	1
		★81-561-011-019	CABINET, FRONT [S]	※	1
		★81-561-013-019	CABINET, FRONT [WR]	※	1
	1-2	81-558-049-010	KNOB, TOGGLE-B		2
	1-3	★81-561-203-019	T-SPRING, BOX-CASSETTE R	※	1
	1-4	81-561-034-019	BOX, CASSETTE R	※	1
	1-5	★81-561-002-010	WINDOW GE	※	1
	1-6	★81-561-001-019	PANEL GE	※	1
	1-7	81-546-210-010	GEAR, OIL-DAMP	CS-230	2
	1-8	★81-546-211-010	HOLDER OIL-DAMP Ass'y	CS-230	2
	1-9	★81-558-047-119	CABINET, REAR EX [B]		1
		81-561-012-019	CABINET, REAR [S]	※	1
		81-561-014-019	CABINET, REAR [WR]	※	1
	1-10	★81-558-219-010	SHAFT, HANDLE		2
	1-11	★81-558-224-010	HOLDER, ANTENNA		1
	1-12	87-043-088-019	WHIP-ANTENNA		1
	1-13	★81-558-056-010	GRIP, HANDLE [B]		1
		★81-561-019-010	GRIP, HANDLE [S]	※	1
		★81-561-020-010	GRIP, HANDLE [WR]	※	1
	1-14	81-558-033-010	LID, BATTERY [B]		1
		81-561-015-010	LID, BATTERY [S]	※	1
		81-561-016-010	LID, BATTERY [WR]	※	1
	1-15	---	M CUSHION 14-170-4T		2
	1-16	---	SHEET PVC 15-3-20		2
	1-17	81-528-216-010	PLATE, BATTERY WR	CA-30	1
	1-18	---	PLATE, SPEC.		1
	1-19	★81-558-217-010	C-SPRING, BATTERY L		1
	1-20	---	SHEET, PVC 39.6×17.9		1
	1-21	★81-558-211-019	C-SPRING, BATTERY C		1
	1-22	★81-558-210-010	C-SPRING, BATTERY A		1
	1-23	★81-533-032-010	ARM, HANDLE	CA-W50	2
	1-24	★81-558-021-010	PLATE, VOLUME		1
	1-25	★81-558-019-019	KNOB, VOLUME L		1
	1-26	★81-558-020-019	KNOB, VOLUME R		1
	1-27	★81-561-202-019	KNOB, JOINT	※	1
	1-28	86-150-008-010	KNOB, SELECTOR		1
	1-29	★81-561-004-110	WINDOW DIAL H (H, HU, G only)	※	1
		★81-561-005-010	WINDOW DIAL U (U, C only)	※	1
		★81-561-006-010	WINDOW DIAL E (E, K, Z only)	※	1
	1-30	★81-561-010-019	PLATE DIAL	※	1
	1-31	★81-558-010-019	PLATE A		1
	1-32	★81-533-237-010	FOOT, RUBBER CIRCLE 10	CA-W50	2
	1-33	★81-561-008-019	PUSH-KEY, PLATE HB (HB, HUB only)	※	1
		★81-561-049-019	PUSH-KEY, PLATE EB (EB, KB, GB, ZB only)	※	1
		★81-561-031-019	PUSH-KEY, PLATE HS (HS only)	※	1
		★81-561-050-019	PUSH-KEY, PLATE ES (ES, KS, GS, ZS only)	※	1
		★81-561-051-019	PUSH-KEY, PLATE EWR (EWR, ZWR only)	※	1
		★81-561-009-019	PUSH-KEY, PLATE U (UB, CB only)	※	1
	1-34	★81-533-039-019	SHEET, TAPE IND	CA-W50	1
	1-35	★81-558-058-019	FRAME TU (EX)		1
	1-36	★81-701-012-010	KNOB GE		5
	1-37	★81-561-201-019	SLIDER GE	※	5
	1-38	★81-558-231-010	P-SPRING, CASSETTE C		1
	1-39	★81-561-007-210	WINDOW, CASSETTE	※	1
	1-40	---	CABINET, SHEET PVC		1

EXPLODED VIEW-2

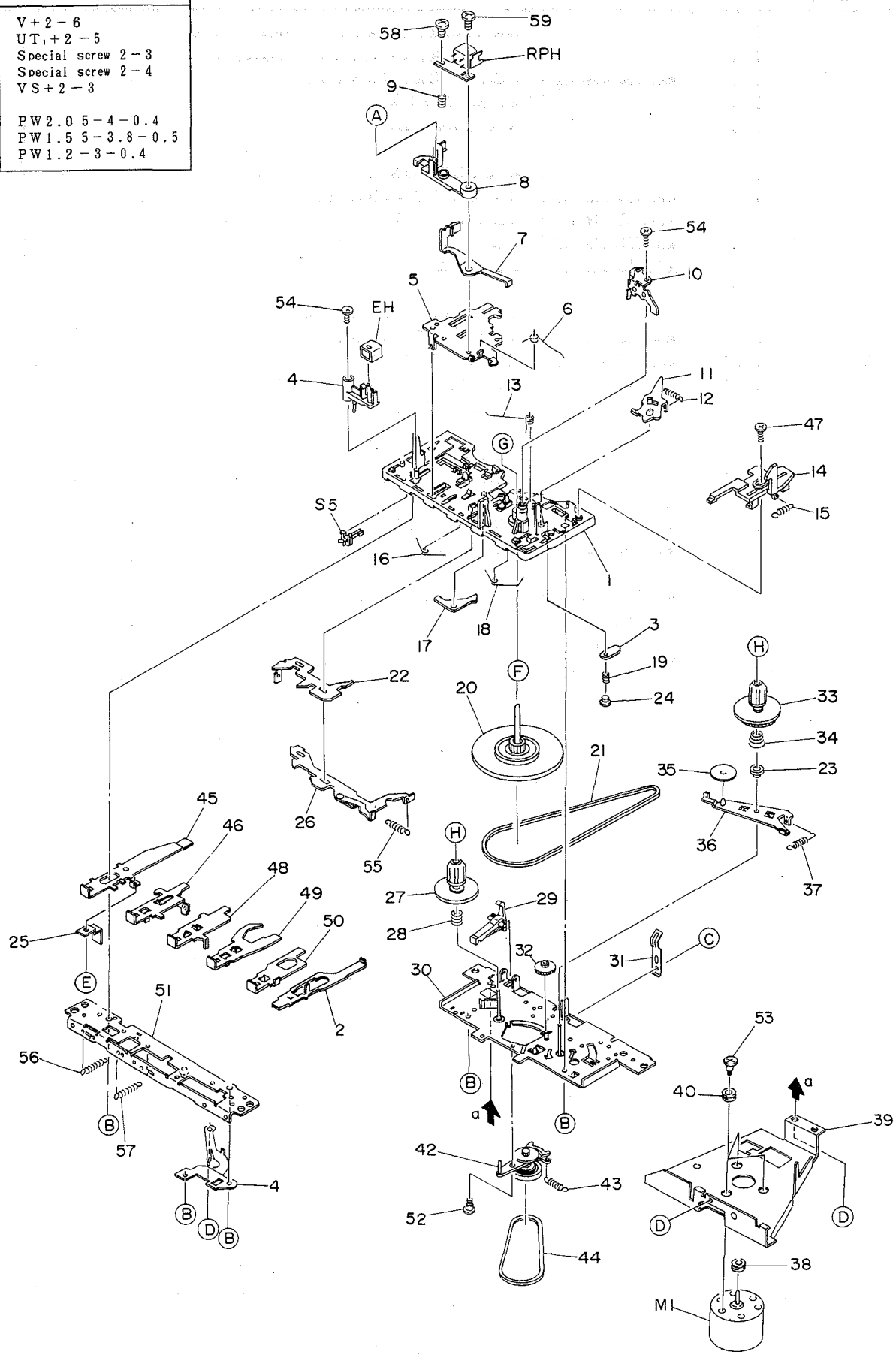
Ref. No.	Part No.	Description
A	86-521-211-01	Special screw V+2-7
B	87-341-073-21	UT1+2.6-6
C	87-351-096-21	VT1+3-10
D	87-356-099-21	VT1+3-15 [RED]
E	87-511-075-21	VFT1+2.6-10
F	87-511-096-21	VFT1+3-10
G	87-067-282-01	Special screw
H	87-067-293-01	PW2-4.5-0.5
I	87-067-292-01	PW2.5-6-0.5
J	87-261-073-21	U+2.6-6
K	87-521-094-21	ITS+3-6
L	87-356-096-21	VT1+3-10 [RED]



Part No. changed to	Ref. No.	Part No.	Description	Common Model	Q'ty	
	2-1	---	HOLDER, CIRCUIT BOARD R		1	
	2-2	---	HOLDER, CIRCUIT BOARD L		1	
	2-3	★81-558-018-019	POINTER, TUNING		1	
	2-4	---	SHEET VINYL 73-50		1	
	2-5	---	G CUSHION		1	
	2-6	---	G CUSHION 2.5-6-2.5		2	
	2-7	★81-558-212-010	DRUM, TUNING EX		1	
	2-8	★81-747-239-010	DRUM JOINT		1	
	2-9	★81-558-205-019	GEAR B		1	
	2-10	★81-558-204-019	GEAR A		1	
	2-11	---	CHASSIS, TUNING		1	
	2-12	★81-558-202-019	SHAFT, TUNING		1	
	2-13	★81-533-013-010	KNOB, TUNING	CA-W50	1	
	2-14	---	HOLDER, CHASSIS TUNING		1	
	2-15	---	S CUSHION 15-15-15		1	
	2-16	---	SHILDE P. T		1	
	2-17	---	HOLDER, TRANS		1	
	2-18	★81-558-206-019	LEVER, REC		1	
	2-19	★86-525-221-110	FRAME BUTTON Ass'y		1	
	2-20	★81-561-030-019	PUSH-KEY, PAUSE	※	1	
	2-21	★81-561-029-019	PUSH-KEY, STOP	※	1	
	2-22	★81-558-012-019	PUSH-KEY, FF		1	
	2-23	★81-558-011-019	PUSH-KEY, PLAY		1	
	2-24	★81-558-013-019	PUSH-KEY, REW		1	
	2-25	★81-561-033-019	PUSH-KEY, REC	※	1	
	2-26	---	G CUSHION 11-8-17		1	

EXPLODED VIEW-3

Ref. No.	Description
A	V+2-6
B	UT,+2-5
C	Special screw 2-3
D	Special screw 2-4
E	VS+2-3
F	PW2.0 5-4-0.4
G	PW1.5 5-3.8-0.5
H	PW1.2 -3-0.4



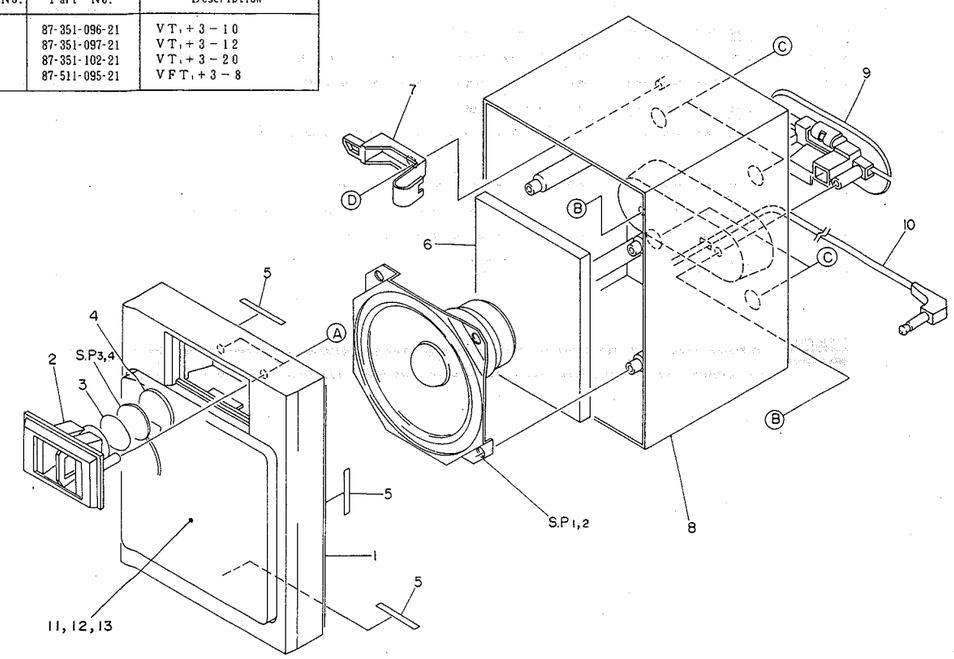
Part No. changed to	Ref. No.	Part No.	Description	Common Model	Q'ty
	3-1	★86-521-219-010	MAIN CHASSIS		1
	3-2	★S1-821-015-030	PAUSE BUTTON LEVER		1
	3-3	---	PAUSE LEVER		1
	3-4	★84-405-246-010	MG ARM		1
	3-5	★86-527-211-010	HEAD PANEL		1
	3-6	★86-528-235-010	PINCH ROLLER SPRING		1
	3-7	★86-521-243-010	DETECTION PLATE Ass'y		1
	3-8	★84-405-243-010	HLAD BASE .		1
	3-9	★86-521-245-010	AZIMUTH SPRING		1
	3-10	81-557-267-010	PINCH ROLLER ARM Ass'y		1
	3-11	★81-557-260-010	AUTO LEVER		1
	3-12	★86-521-238-010	AUTO LEVER SPRING		1
	3-13	★81-557-266-010	HEAD PANEL SPRING S		1
	3-14	★86-521-268-010	EJECT SLIDE LEVER		1
	3-15	★86-521-269-010	EJECT SLIDE LEVER SPRING		1
	3-16	★86-527-209-010	BUTTON LEVER SPRING B		1
	3-17	---	RWD LEVER		1
	3-18	★86-521-232-010	BUTTON LEVER SPRING C		1
	3-19	★86-521-230-010	PAUSE LEVER SPRING		1
	3-20	★S1-821-093-050	FLYWHEEL Ass'y		1
	3-21	S1-821-122-200	MAIN BELT		1
	3-22	★86-521-220-010	SWITCH ACTUATING PLATE		1
	3-23	★S1-821-106-300	TG PLATE COLLAR		1
	3-24	★86-521-231-010	PAUSE STOPPER		1
	3-25	★S1-821-013-340	REC SPRING PLATE		1
	3-26	★86-527-204-010	PUSH-BUTTON ACTUATING PLATE		1
	3-27	81-557-277-010	SUPPLY REEL Ass'y		1
	3-28	★S1-821-106-400	BACK TENSION SPRING		1
	3-29	★81-504-202-210	REC SAFETY LEVER		1
	3-30	★S1-829-105-150	REEL CHASSIS		1
	3-31	★S1-829-100-400	PACK BEARING SPRING		1
	3-32	S1-821-103-500	FF GEAR		1
	3-33	S1-829-103-120	TAKE-UP REEL Ass'y		1
	3-34	★81-557-279-010	BACK TENSION SPRING		1
	3-35	S1-821-103-400	T. ROLLER GEAR		1
	3-36	★S1-821-105-170	T. GEAR PLATE		1
	3-37	★86-521-256-010	TG PLATE SPRING		1
	3-38	★84-405-263-010	MOTOR PULLEY		1
	3-39	---	MOTOR BRACKET		1
	3-40	★81-533-388-010	MOTOR RUBBER		3
	3-41	★S1-821-391-900	GUIDE, METAL		1
	3-42	S1-821-013-170	RF PULLEY ARM Ass'y		1
	3-43	★84-405-253-010	RF PULLEY ARM SPRING		1
	3-44	S1-821-071-100	RF BELT		1
	3-45	---	REC BUTTON LEVER		1
	3-46	---	PLAY BUTTON LEVER		1
	3-47	★86-521-270-010	P. M. E SCREW		1
	3-48	---	RWD BUTTON LEVER		1
	3-49	---	FF BUTTON LEVER		1
	3-50	---	STOP BUTTON LEVER		1

Part No. changed to	Ref. No.	Part No.	Description	Common Model	Q'ty
	3-51	★86-527-213-010	SUB PLATE		1
	3-52	★81-557-270-010	RF ARM COLLAR SCREW		1
	3-53	★86-521-264-010	MOTOR COLLAR SCREW		3
	3-54	★84-405-279-010	MS SCREW		2
	3-55	★86-521-236-010	ACTUATING PLATE SPRING		1
	3-56	★86-521-235-010	BUTTON LEVER SPRING A		1
	3-57	★86-557-262-010	PLAY BUTTON LEVER SPRING S		1
	3-58	★84-405-274-010	AZIMUTH SCREW M2×7		1
	3-59	★84-405-273-010	⊕⊖ SCREW M2×7		1

Note **When placing an order for service parts, always enter the parts code number up to the last numeral on the service parts ordering sheet.**

EXPLODED VIEW-4

Ref. No.	Part No.	Description
A	87-351-096-21	VT,+3-10
B	87-351-097-21	VT,+3-12
C	87-351-102-21	VT,+3-20
D	87-511-095-21	VFT,+3-8



■SPEAKER LIST

Part No. changed to	Ref. No.	Part No.	Description	Common Model	Q'ty
	4-1	★81-558-113	SP-BOX, FRONT R [B]	CA-W3	1
		★81-561-038	SP-BOX, FRONT R [S]	※	1
		★81-561-040	SP-BOX, FRONT R [WR]	※	1
		★81-558-114	SP-BOX, FRONT L [B]	CA-W3	1
		★81-561-039	SP-BOX, FRONT L [S]	※	1
		★81-561-041	SP-BOX, FRONT L [WR]	※	1
	4-2	★81-558-104	TWEETER HORN	CA-W3	1
	4-3	---	TWEETER MESH		1
	4-4	---	TWEETER CUSHION		1
	4-5	---	SHEET SPEAKER		4
	4-6	---	ACOUSTICAL METERIAL		1
	4-7	---	STOPPER SP-L		1
		---	STOPPER SP-R		1
	4-8	★81-561-042	SP-BOX, REAR R [S]	※	1
		★81-558-119	SP-BOX, REAR R [B]	CA-W3	1
		★81-561-044	SP-BOX, REAR R [WR]	※	1
		★81-561-043	SP-BOX, REAR L [S]	※	1
		★81-558-120	SP-BOX, REAR L [B]	CA-W3	1
		★81-561-045	SP-BOX, REAR L [WR]	※	1
	4-9	---	CORD HOLDER		
	4-10	★81-558-623	ø3.5 PLUG CORD	※	1
	4-11	★81-550-106	LABEL SPEAKER		1
	4-12	★81-558-105	PUNCHING		1
	4-13	★81-550-097	CLOTH PUNCHING		4

■ACCESSORIES/PACKAGE LIST

Part No. changed to	Ref. No.	Part No.	Description	Common Model	Q'ty
	1	★81-561-904	INSTRUCTION BOOKLET (H, HU, U, C, G only)	※	1
	2	★81-561-905	INSTRUCTION BOOKLET (E, K, Z only)	※	1
	3	★82-593-968	POWER CORD H (H, HU only)		1
	4	★87-034-991	AC CORD F Ass'y U C (U, C only)		1
	5	★87-034-989	AC CORD Ass'y E (E, Z only)		1
	6	★81-504-968	AC CORD K (K only)		1
	7	★81-504-967	AC CORD AS (G only)		1
	8	★87-049-137	SIEMENS PLUG (H, HU only)		1

AIWA Co., Ltd. Tokyo Japan

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ELECTRICAL MAIN PARTS LIST

- +++ mark denotes a component of assembled part which part code is represented by a previously stated component.
- ★-mark means less required items and availabilities may be limited.

CAPACITORS No mark, U, UF: μF P, PF : pF

COILS MMH: mH UH : μH

FUSE MMA: mA

Ref. No.	Part No.	Description
=== IC ===		
	87-020-461	IC,BA4234L
	81-504-628	IC,LA3220
	87-020-271	IC,LA3600
	87-020-617	IC,LA4500
	87-020-446	IC,TA7343 AP
	87-020-356	IC,TA7358P
	87-027-910	IC,UPC1228H
=== TRANSISTOR ===		
	89-110-155	TRANSISTOR,2SA1015
	89-112-965	TRANSISTOR,2SA1296GR
	89-309-455	TRANSISTOR,2SC945PQ
	89-318-474	TRANSISTOR,2SC1847R
	89-319-233	TRANSISTOR,2SC1923
=== TUNER CIRCUIT BOARD SECTION ===		
PCB-A	81-544-628	TUNER CIRCUIT BOARD
BPF1	★ 87-030-105	FILTER BPMB6A
C1	★ 87-018-176	CAP,CERA-SOL SS 22P(H,G ONLY)
C1	★ 87-018-110	CAP,CERA-SOL SS 24P(E,K,Z ONLY)
C2	★ 87-018-134	CAP,CERA-SOL SS 0.01
C3	★ 87-018-133	CAP,CERA-SOL SS 4700P
C4	★ 87-018-097	CAP,CERA-SOL SS 2.2P
C5	★ 87-018-104	CAP,CERA-SOL SS 10P
C6	★ 87-018-134	CAP,CERA-SOL SS 0.01
C7	★ 87-018-134	CAP,CERA-SOL SS 0.01
C8	★ 87-018-134	CAP,CERA-SOL SS 0.01
C9	★ 87-018-162	CAP,CERA-SOL SS 15P
C10	★ 87-018-151	CAP,CERA-SOL SS 20P
C11	★ 87-018-141	CAP,CERA-SOL SS 3.3P
C12	★ 87-018-134	CAP,CERA-SOL SS 0.01
C13	★ 87-018-106	CAP,CERA-SOL SS 15P
C14	★ 87-018-133	CAP,CERA-SOL SS 4700P
C15	★ 87-018-134	CAP,CERA-SOL SS 0.01
C16	★ 87-012-105	CAP,CERA-SOL 0.022
C17	★ 87-012-105	CAP,CERA-SOL 0.022
C18	★ 87-018-134	CAP,CERA-SOL SS 0.01
C22	★ 87-018-134	CAP,CERA-SOL SS 0.01
C23	★ 87-018-119	CAP,CERA-SOL SS 100P
C29	★ 87-014-057	CAP,PP 1000P
C37	★ 87-018-103	CAP,CERA-SOL SS 8.2P(H,G ONLY)
C37	★ 87-018-106	CAP,CERA-SOL SS 15P(E,K,Z ONLY)
C38	★ 87-018-103	CAP,CERA-SOL SS 8.2P(H,G ONLY)
C38	★ 87-018-114	CAP,CERA-SOL SS 39P(E,K,Z ONLY)
C39	★ 87-018-131	CAP,CERA-SOL SS 1000P(E,K,Z ONLY)
C40	★ 87-012-105	CAP,CERA-SOL 0.022
C41	★ 87-018-134	CAP,CERA-SOL SS 0.01(E,K,Z ONLY)
C42	★ 87-018-174	CAP,CERA-SOL SS 18P(H,G ONLY)
C42	★ 87-018-176	CAP,CERA-SOL SS 22P(E,K,Z ONLY)
C43	★ 87-018-172	CAP,CERA-SOL SS 12P(H,G ONLY)
C43	★ 87-018-174	CAP,CERA-SOL SS 18P(E,K,Z ONLY)
C44	★ 87-014-061	CAP,PP 1500P(H,G ONLY)
C44	★ 87-014-045	CAP,PP 330P(E,K,Z ONLY)
C45	★ 87-014-045	CAP,PP 330P(H,G ONLY)
C46	★ 87-018-173	CAP,CERA-SOL SS 15P(H,G ONLY)
C46	★ 87-018-179	CAP,CERA-SOL SS 30P(E,K,Z ONLY)
C47	★ 87-018-176	CAP,CERA-SOL SS 22P(H,G ONLY)
C47	★ 87-018-174	CAP,CERA-SOL SS 18P(E,K,Z ONLY)
C48	★ 87-012-105	CAP,CERA-SOL 0.022
C49	★ 87-012-105	CAP,CERA-SOL 0.022
C53	★ 87-018-134	CAP,CERA-SOL SS 0.01
C54	★ 87-018-106	CAP,CERA-SOL SS 15P(H,E,K,G ONLY)
C54	★ 87-018-176	CAP,CERA-SOL SS 22P(Z ONLY)
C55	★ 87-018-176	CAP,CERA-SOL SS 22P(H,G ONLY)
C55	★ 87-018-111	CAP,CERA-SOL SS 27P(E,K ONLY)
C55	★ 87-018-172	CAP,CERA-SOL SS 12P(Z ONLY)
C56	★ 87-018-107	CAP,CERA-SOL SS 18P(H,G ONLY)
C56	★ 87-018-110	CAP,CERA-SOL SS 24P(E,K,Z ONLY)
CF1	★ 87-008-261	FILTER SFE 10.7 MA5A(H,G ONLY)
CF1	★ 87-008-264	FILTER SFE 10.7 MS2-A(E,K,Z ONLY)
CF2	★ 87-008-261	FILTER SFE 10.7 MA5A(H,G ONLY)
CF2	★ 87-008-264	FILTER SFE 10.7 MS2-A(E,K,Z ONLY)
D1	★ 87-017-004	DIODE SD117
D2	★ 87-020-110	DIODE 1SS177
D3	★ 87-020-110	DIODE 1SS177
D4	★ 87-027-431	DIODE,ZENER RD6.2EB2
IFT1	★ 87-008-292	IFT FM PS
IFT2	★ 87-008-293	IFT FM(QUAD)
L1	★ 87-006-084	COIL,RF FM
L2	★ 87-007-162	COIL,OSC FM
L3	★ 87-006-109	COIL,ANT SW2(H,G ONLY)
L3	★ 87-006-088	COIL,ANT SW(E,K,Z ONLY)
L4	★ 81-550-667	BAR ANT MW-SW1(H,G ONLY)
L5	★ +++	BAR ANT MW-SW1(H,G ONLY)
L4	★ 81-561-617	BAR ANT LW-MW(E,K,Z ONLY)
L5	★ +++	BAR ANT LW-MW(E,K,Z ONLY)
L6	★ 87-007-155	COIL,OSC SW2(H,G ONLY)
L6	★ 87-007-156	COIL,OSC SW(E,K,Z ONLY)
L7	★ 87-007-156	COIL,OSC SW1(H,G ONLY)
L7	★ 87-007-154	COIL,OSC MW(E,K,Z ONLY)
L8	★ 87-007-154	COIL,OSC MW(H,G ONLY)
L8	★ 87-007-187	COIL,OSC LW(E,K,Z ONLY)
L9	★ 87-003-158	COIL,CHOKE 0.33UH(H,G,Z ONLY)
L9	★ 87-003-118	COIL,CHOKE 0.27UH(E,K ONLY)
L10	★ 87-005-165	COIL,CHOKE 1UH
MFT1	87-008-310	FILTER CF MA2-468
R30	★ 87-029-060	RES,NONFLAM 33 1/4W
S1	87-031-984	ROTARY SW(BAND SELECTOR)
SFR1	★ 87-021-741	SFR 4.7K
TC5	87-011-155	TRIMMER,CERAMIC 10PF(H,G ONLY)
TC5	87-011-164	TRIMMER,CERAMIC 30PF(E,K,Z ONLY)
TC6	87-011-154	TRIMMER,CERAMIC 6PF
TC7	87-011-154	TRIMMER,CERAMIC 6PF(H,G ONLY)
TC7	87-011-155	TRIMMER,CERAMIC 10PF(E,K,Z ONLY)
TC8	87-011-155	TRIMMER,CERAMIC 10PF(H,G ONLY)
TC8	87-011-164	TRIMMER,CERAMIC 30PF(E,K,Z ONLY)
VC1	★ 87-011-167	PVC,335-20P
VC2	+++	PVC,335-20P
VC3	+++	PVC,335-20P
VC4	+++	PVC,335,20P
TC1	+++	PVC,335-20P
TC2	+++	PVC,335-20P
TC3	+++	PVC,335-20P
TC4	+++	PVC,335-20P
=== MAIN CIRCUIT BOARD SECTION ===		
PCB-B	*	MAIN CIRCUIT BOARD
	81-528-614	ANT.TERMINAL(EXCEPT Z)
C3	★ 87-018-044	CAP,CERA-SOL 1000P
C4	★ 87-018-044	CAP,CERA-SOL 1000P
C7	★ 87-018-047	CAP,CERA-SOL 0.01
C8	★ 87-018-047	CAP,CERA-SOL 0.01
C11	★ 87-018-047	CAP,CERA-SOL 0.01
C12	★ 87-018-047	CAP,CERA-SOL 0.01
C19	★ 87-018-018	CAP,CERA-SOL S 27P
C20	★ 87-018-018	CAP,CERA-SOL S 27P
C25	★ 87-018-043	CAP,CERA-SOL 820P
C26	★ 87-018-043	CAP,CERA-SOL 820P
C27	★ 87-018-043	CAP,CERA-SOL 820P
C28	★ 87-018-043	CAP,CERA-SOL 820P
C29	★ 87-018-040	CAP,CERA-SOL 470P
C30	★ 87-018-040	CAP,CERA-SOL 470P
C31	★ 87-015-692	CAP,ELECT 0.22/50V
C32	★ 87-015-692	CAP,ELECT 0.22/50V
C37	★ 87-010-283	CAP,ELECT 2200/10V
C38	★ 87-010-283	CAP,ELECT 2200/10V
C41	★ 87-018-022	CAP,CERA-SOL S 39P
C42	★ 87-018-022	CAP,CERA-SOL S 39P
C44	★ 87-018-045	CAP,CERA-SOL S 2200P
C53	★ 87-018-047	CAP,CERA-SOL 0.01
C55	★ 87-018-047	CAP,CERA-SOL 0.01
C63	★ 87-018-047	CAP,CERA-SOL 0.01
C64	★ 87-018-047	CAP,CERA-SOL 0.01
C71	★ 87-018-047	CAP,CERA-SOL 0.01(H ONLY)
C73	★ 87-018-047	CAP,CERA-SOL 0.01(H ONLY)
D1	82-135-799	DIODE 1N4108
D2	82-135-799	DIODE 1N4108
D3	82-596-799	DIODE 1N4002
D4	82-596-799	DIODE 1N4002
D6	87-027-399	DIODE,ZENER HZ7A3L
D7	82-135-799	DIODE 1N4148
D8	82-135-799	DIODE 1N4148
D10	82-596-799	DIODE 1N4002
D12	82-027-199	DIODE,ZENER 05Z15U(H ONLY)
J1	87-049-423	JACK PHONO WHITE(LINE IN L)
J2	87-049-424	JACK PHONO RED(LINE IN R)
J3	87-049-335	JACK 3.5ST BLK(MIC)
J4	87-049-338	JACK 2.5 REM BLU(PLAYER SYNC)
J5	87-049-084	JACK DIA 3.5(EXT SP.L)
J6	87-049-084	JACK DIA 3.5(EXT SP.R)
J7	87-049-436	JACK 3.5 ST SS(BLK)(PHONES)
L1	★ 87-003-106	INDUCTOR COIL 0.33UH (EXCEPT Z)
L2	★ 87-033-105	INDUCTOR COIL 0.22UH(E,K ONLY)
L3	81-558-617	COIL,BIAS OSC
R41	★ 87-025-239	RES,NONFLAM 2.2 1/4W
R42	★ 87-025-239	RES,NONFLAM 2.2 1/4W
⚠ R70	★ 87-029-070	RES,FUSIBLE 2.2 1/4W
R71	★ 87-025-313	RES,NONFLAM 4.7 1/4W
S1	81-561-621	SLIDE SW(REC/PB)
S2	87-031-971	LEVER SW(FUNCTION)
S3	87-031-972	LEVER SW(FM MODE/TAPE)
=== VOLUME CIRCUIT BOARD SECTION ===		
PCB-C	*	VOLUME CIRCUIT BOARD
D9	★ 87-020-485	LED LN25ORPH(OPE/BATT)
VR1	81-558-621	SLIDE VOLUME 50KB(VOLUME LEFT)
VR2	81-558-621	SLIDE VOLUME 50KB(VOLUME RIGHT)
=== G.EQ. CIRCUIT BOARD SECTION ===		
PCB-D	81-540-602	G.EQ. CIRCUIT BOARD
C201	★ 87-015-695	CAP,ELECT 1-50V
C202	★ 87-015-695	CAP,ELECT 1-50V
C203	★ 87-015-695	CAP,ELECT 1-50V
C204	★ 87-015-695	CAP,ELECT 1-50V
C219	★ 87-018-039	CAP,CERA-SOL 390P
C220	★ 87-018-039	CAP,CERA-SOL 390P
C225	★ 87-018-044	CAP,CERA-SOL 1000P
C226	★ 87-018-044	CAP,CERA-SOL 1000P
VR3	81-561-607	SLIDE VOLUME 100K-B(G.EQ. 70HZ)
VR4	+++	SLIDE VOLUME 100K-B(G.EQ. 70HZ)
VR5	81-561-607	SLIDE VOLUME 100K-B(G.EQ. 350HZ)
VR6	+++	SLIDE VOLUME 100K-B(G.EQ. 350HZ)
VR7	81-561-607	SLIDE VOLUME 100K-B(G.EQ. 1KHZ)
VR8	+++	SLIDE VOLUME 100K-B(G.EQ. 1KHZ)
VR9	81-561-607	SLIDE VOLUME 100K-B(G.EQ. 3.5KHZ)
VR10	+++	SLIDE VOLUME 100K-B(G.EQ. 3.5KHZ)
VR11	81-561-607	SLIDE VOLUME 100K-B(G.EQ. 10KHZ)
VR12	+++	SLIDE VOLUME 100K-B(G.EQ. 10KHZ)
=== POWER CIRCUIT BOARD SECTION ===		
⚠ PCB-E	81-561-601	POWER CIRCUIT BOARD
C401	★ 89-663-815	CAP,CERA-SOL 0.01
C402	★ 89-663-815	CAP,CERA-SOL 0.01
C403	★ 89-663-815	CAP,CERA-SOL 0.01
C404	★ 89-663-815	CAP,CERA-SOL 0.01
C405	★ 87-010-080	CAP,ELECT 4700-25V
D401	82-596-799	DIODE IN4002
D402	82-596-799	DIODE IN4002
D403	82-596-799	DIODE IN4002
D404	82-596-799	DIODE IN4002
⚠ J8	★ 87-032-954	JACK AC(H)(AC)(H ONLY)
⚠ J8	★ 87-032-977	JACK AC(E)(AC)(EXCEPT H)
⚠ S4	87-031-780	SLIDE SW AC(AC VOLTAGE)
⚠ T1	★ 81-561-604	POWER TRANSFORMER PT(H)(H ONLY)
⚠ T1	★ 81-561-603	POWER TRANSFORMER PT(E)(EXCEPT H)
=== MISCELLANEOUS ===		
	★ 81-558-610	CONNECTOR 4P ASSY RPH
EH	87-046-264	HEAD MG EA 50
M1	81-561-303	MOTOR EG-500AD-2B
RPH	87-046-239	R/P HEAD
S5	87-031-975	LEAF SW(PLAY)
=== SPEAKER SECTION ===		
	81-558-623	CODE 3.5 PLUG L
SP1	81-558-615	SPEAKER WOOFER
SP2	81-558-615	SPEAKER WOOFER
SP3	83-097-603	SPEAKER TWEETER
SP4	83-097-603	SPEAKER TWEETER

⚠ Safety component symbol

This symbol is given to important parts which serve to maintain the safety of the product, and which are made to conform to special safety specifications. Therefore, when replacing a component with this symbol, make absolutely sure that you use a designated part.

IC handling precaution

IC's construction makes this part susceptible to damage by static electricity and so take sufficient care in regard to following articles.

1. Need to be put on conductive sheet, to be put in a metallic box and to be wrapped by aluminium foil for transportation and deposit.
2. To use solder iron less than 40W (less than 260°C) of power consumption for soldering. But do not overheat more than 10 second.
3. Do not perform a conductivity test with a tester, etc. Refer to the circuit voltages of each part.

Note; Cor
The parts
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PCB-B
PCB-C

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Wow and F
Take up t
FF & re

otes a component of assembled part which part code
by a previously stated component.
less required items and availabilities may be limited.

CAPACITORS
No mark, U, UF: μF
P, PF : pF

COILS
MMH: mH
UH : μH

FUSE
MMA: mA

ef. No.	Part No.	Description
C54	★ 87-018-176	CAP,CERA-SOL SS 22P(Z ONLY)
C55	★ 87-018-176	CAP,CERA-SOL SS 22P(H,G ONLY)
C55	★ 87-018-111	CAP,CERA-SOL SS 27P(E,K ONLY)
C55	★ 87-018-172	CAP,CERA-SOL SS 12P(Z ONLY)
C56	★ 87-018-107	CAP,CERA-SOL SS 18P(H,G ONLY)
C56	★ 87-018-110	CAP,CERA-SOL SS 24P(E,K,Z ONLY)
CF1	★ 87-008-261	FILTER SFE 10.7 MA5A(H,G ONLY)
CF1	★ 87-008-264	FILTER SFE 10.7 MS2-A(E,K,Z ONLY)
CF2	★ 87-008-261	FILTER SFE 10.7 MA5A(H,G ONLY)
CF2	★ 87-008-264	FILTER SFE 10.7 MS2-A(E,K,Z ONLY)
D1	★ 87-017-004	DIODE SD117
D2	★ 87-020-110	DIODE 1SS177
D3	★ 87-020-110	DIODE 1SS177
D4	★ 87-027-431	DIODE,ZENER RD6.2EB2
IFT1	★ 87-008-292	IFT FM PS
IFT2	★ 87-008-293	IFT FM(QUAD)
L1	★ 87-006-084	COIL,RF FM
L2	★ 87-007-162	COIL,OSC FM
L3	★ 87-006-109	COIL,ANT SW2(H,G ONLY)
L3	★ 87-006-088	COIL,ANT SW(E,K,Z ONLY)
L4	★ 81-550-667	BAR ANT MW-SW1(H,G ONLY)
L5	★ +++	BAR ANT MW-SW1(H,G ONLY)
L4	★ 81-561-617	BAR ANT LW-MW(E,K,Z ONLY)
L5	★ +++	BAR ANT LW-MW(E,K,Z ONLY)
L6	★ 87-007-155	COIL,OSC SW2(H,G ONLY)
L6	★ 87-007-156	COIL,OSC SW(E,K,Z ONLY)
L7	★ 87-007-156	COIL,OSC SW1(H,G ONLY)
L7	★ 87-007-154	COIL,OSC MW(E,K,Z ONLY)
L8	★ 87-007-154	COIL,OSC MW(H,G ONLY)
L8	★ 87-007-187	COIL,OSC LW(E,K,Z ONLY)
L9	★ 87-003-158	COIL,CHOKE 0.33UH(H,G,Z ONLY)
L9	★ 87-003-118	COIL,CHOKE 0.27UH(E,K ONLY)
L10	★ 87-005-165	COIL,CHOKE 1UH
MFT1	87-008-310	FILTER CF MA2-468
R30	★ 87-029-060	RES,NONFLAM 33 1/4W
S1	87-031-984	ROTARY SW(BAND SELECTOR)
SFR1	★ 87-021-741	SFR 4.7K
TC5	87-011-155	TRIMMER,CERAMIC 10PF(H,G ONLY)
TC5	87-011-164	TRIMMER,CERAMIC 30PF(E,K,Z ONLY)
TC6	87-011-154	TRIMMER,CERAMIC 6PF
TC7	87-011-154	TRIMMER,CERAMIC 6PF(H,G ONLY)
TC7	87-011-155	TRIMMER,CERAMIC 10PF(E,K,Z ONLY)
TC8	87-011-155	TRIMMER,CERAMIC 10PF(H,G ONLY)
TC8	87-011-164	TRIMMER,CERAMIC 30PF(E,K,Z ONLY)
VC1	★ 87-011-167	PVC,335-20P
VC2	+++	PVC,335-20P
VC3	+++	PVC,335-20P
VC4	+++	PVC,335,20P
TC1	+++	PVC,335-20P
TC2	+++	PVC,335-20P
TC3	+++	PVC,335-20P
TC4	+++	PVC,335-20P

=== MAIN CIRCUIT BOARD SECTION ===

PCB-B	*	MAIN CIRCUIT BOARD
	81-528-614	ANT.TERMINAL(EXCEPT Z)
C3	★ 87-018-044	CAP,CERA-SOL 1000P
C4	★ 87-018-044	CAP,CERA-SOL 1000P
C7	★ 87-018-047	CAP,CERA-SOL 0.01
C8	★ 87-018-047	CAP,CERA-SOL 0.01
C11	★ 87-018-047	CAP,CERA-SOL 0.01
C12	★ 87-018-047	CAP,CERA-SOL 0.01
C19	★ 87-018-018	CAP,CERA-SOL S 27P
C20	★ 87-018-018	CAP,CERA-SOL S 27P
C25	★ 87-018-043	CAP,CERA-SOL 820P
C26	★ 87-018-043	CAP,CERA-SOL 820P
C27	★ 87-018-043	CAP,CERA-SOL 820P
C28	★ 87-018-043	CAP,CERA-SOL 820P
C29	★ 87-018-040	CAP,CERA-SOL 470P
C30	★ 87-018-040	CAP,CERA-SOL 470P
C31	★ 87-015-692	CAP,ELECT 0.22/50V
C32	★ 87-015-692	CAP,ELECT 0.22/50V
C37	★ 87-010-283	CAP,ELECT 2200/10V
C38	★ 87-010-283	CAP,ELECT 2200/10V
C41	★ 87-018-022	CAP,CERA-SOL S 39P
C42	★ 87-018-022	CAP,CERA-SOL S 39P
C44	★ 87-018-045	CAP,CERA-SOL S 2200P
C53	★ 87-018-047	CAP,CERA-SOL 0.01
C55	★ 87-018-047	CAP,CERA-SOL 0.01
C63	★ 87-018-047	CAP,CERA-SOL 0.01
C64	★ 87-018-047	CAP,CERA-SOL 0.01
C71	★ 87-018-047	CAP,CERA-SOL 0.01(H ONLY)
C73	★ 87-018-047	CAP,CERA-SOL 0.01(H ONLY)
D1	82-135-799	DIODE 1N4108
D2	82-135-799	DIODE 1N4108
D3	82-596-799	DIODE 1N4002
D4	82-596-799	DIODE 1N4002
D6	87-027-399	DIODE,ZENER HZ7A3L
D7	82-135-799	DIODE 1N4148
D8	82-135-799	DIODE 1N4148
D10	82-596-799	DIODE 1N4002
D12	82-027-199	DIODE,ZENER 05Z15U(H ONLY)
J1	87-049-423	JACK PHONO WHITE(LINE IN L)
J2	87-049-424	JACK PHONO RED(LINE IN R)
J3	87-049-335	JACK 3.5ST BLK(MIC)
J4	87-049-338	JACK 2.5 REM BLU(PLAYER SYNC)
J5	87-049-084	JACK DIA 3.5(EXT SP.L)
J6	87-049-084	JACK DIA 3.5(EXT SP.R)
J7	87-049-436	JACK 3.5 ST SS(BLK)(PHONES)
L1	★ 87-003-106	INDUCTOR COIL 0.33UH (EXCEPT Z)
L2	★ 87-033-105	INDUCTOR COIL 0.22UH(E,K ONLY)
L3	81-558-617	COIL,BIAS OSC
R41	★ 87-025-239	RES,NONFLAM 2.2 1/4W
R42	★ 87-025-239	RES,NONFLAM 2.2 1/4W
⚠ R70	★ 87-029-070	RES,FUSIBLE 2.2 1/4W
R71	★ 87-025-313	RES,NONFLAM 4.7 1/4W
S1	81-561-621	SLIDE SW(REC/PB)
S2	87-031-971	LEVER SW(FUNCTION)
S3	87-031-972	LEVER SW(FM MODE/TAPE)

=== VOLUME CIRCUIT BOARD SECTION ===

PCB-C	*	VOLUME CIRCUIT BOARD
D9	★ 87-020-485	LED LN25ORPH(OPE/BATT)
VR1	81-558-621	SLIDE VOLUME 50KB(VOLUME LEFT)
VR2	81-558-621	SLIDE VOLUME 50KB(VOLUME RIGHT)

=== G.EQ. CIRCUIT BOARD SECTION ===

PCB-D	81-540-602	G.EQ. CIRCUIT BOARD
C201	★ 87-015-695	CAP,ELECT 1-50V
C202	★ 87-015-695	CAP,ELECT 1-50V
C203	★ 87-015-695	CAP,ELECT 1-50V
C204	★ 87-015-695	CAP,ELECT 1-50V
C219	★ 87-018-039	CAP,CERA-SOL 390P
C220	★ 87-018-039	CAP,CERA-SOL 390P
C225	★ 87-018-044	CAP,CERA-SOL 1000P
C226	★ 87-018-044	CAP,CERA-SOL 1000P
VR3	81-561-607	SLIDE VOLUME 100K-B(G.EQ. 70HZ)
VR4	+++	SLIDE VOLUME 100K-B(G.EQ. 70HZ)
VR5	81-561-607	SLIDE VOLUME 100K-B(G.EQ. 350HZ)
VR6	+++	SLIDE VOLUME 100K-B(G.EQ. 350HZ)
VR7	81-561-607	SLIDE VOLUME 100K-B(G.EQ. 1KHZ)
VR8	+++	SLIDE VOLUME 100K-B(G.EQ. 1KHZ)
VR9	81-561-607	SLIDE VOLUME 100K-B(G.EQ. 3.5KHZ)
VR10	+++	SLIDE VOLUME 100K-B(G.EQ. 3.5KHZ)
VR11	81-561-607	SLIDE VOLUME 100K-B(G.EQ. 10KHZ)
VR12	+++	SLIDE VOLUME 100K-B(G.EQ. 10KHZ)

=== POWER CIRCUIT BOARD SECTION ===

⚠ PCB-E	81-561-601	POWER CIRCUIT BOARD
C401	★ 89-663-815	CAP,CERA-SOL 0.01
C402	★ 89-663-815	CAP,CERA-SOL 0.01
C403	★ 89-663-815	CAP,CERA-SOL 0.01
C404	★ 89-663-815	CAP,CERA-SOL 0.01
C405	★ 87-010-080	CAP,ELECT 4700-25V
D401	82-596-799	DIODE 1N4002
D402	82-596-799	DIODE 1N4002
D403	82-596-799	DIODE 1N4002
D404	82-596-799	DIODE 1N4002
⚠ J8	★ 87-032-954	JACK AC(H)(AC)(H ONLY)
⚠ J8	★ 87-032-977	JACK AC(E)(AC)(EXCEPT H)
⚠ S4	87-031-780	SLIDE SW AC(AC VOLTAGE)
⚠ T1	★ 81-561-604	POWER TRANSFORMER PT(H)(H ONLY)
⚠ T1	★ 81-561-603	POWER TRANSFORMER PT(E)(EXCEPT H)

=== MISCELLANEOUS ===

	★ 81-558-610	CONNECTOR 4P ASSY RPH
EH	87-046-264	HEAD MG EA 50
M1	81-561-303	MOTOR EG-500AD-2B
RPH	87-046-239	R/P HEAD
S5	87-031-975	LEAF SW(PLAY)

=== SPEAKER SECTION ===

	81-558-623	CODE 3.5 PLUG L
SP1	81-558-615	SPEAKER WOOFER
SP2	81-558-615	SPEAKER WOOFER
SP3	83-097-603	SPEAKER TWEETER
SP4	83-097-603	SPEAKER TWEETER

⚠ Safety component symbol

This symbol is given to important parts which serve to maintain the safety of the product, and which are made to conform to special safety specifications. Therefore, when replacing a component with this symbol, make absolutely sure that you use a designated part.

IC handling precaution

IC's construction makes this part susceptible to damage by static electricity and so take sufficient care in regard to following articles.

1. Need to be put on conductive sheet, to be put in a metallic box and to be wrapped by aluminium foil for transportation and deposit.
2. To use solder iron less than 40W (less than 260°C) of power consumption for soldering. But do not overheat more than 10 second.
3. Do not perform a conductivity test with a tester, etc. Refer to the circuit voltages of each part.

Note; Combination Circuit Board

The parts on the electrical parts list which are indicated by an asterisk (*) are supplied as one single combined circuit board. Therefore, they will not be supplied separately. If this becomes necessary, please order the entire circuit board.

Combination circuit board 81-561-618
PCB-B 81-561-619
PCB-C 81-561-620

Practical Service Figure

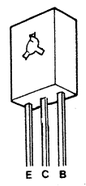
<RADIO SECTION>

Sensitivity:	H, HU, G models	
(IHF, THD 3%)	FM	Less than 20dB (at 100MHz)
(S/N 10dB)	SW_2	Less than 26dB (at 14.0MHz)
(S/N 10dB)	SW_1	Less than 46dB (at 4.0MHz)
(S/N 10dB)	MW	Less than 52dB (at 1000kHz)
	E, K, Z models	
(IHF, THD 3%)	FM	Less than 20dB (at 100MHz)
(S/N 10dB)	SW	Less than 26dB (at 12.0MHz)
(S/N 10dB)	MW	Less than 46dB (at 1000kHz)
(S/N 10dB)	LW	Less than 56dB (at 200kHz)
Intermediate frequency:	FM	10.7MHz
	AM	468kHz
FM stereo separation:	More than 18dB	

<TAPE RECORDER SECTION>

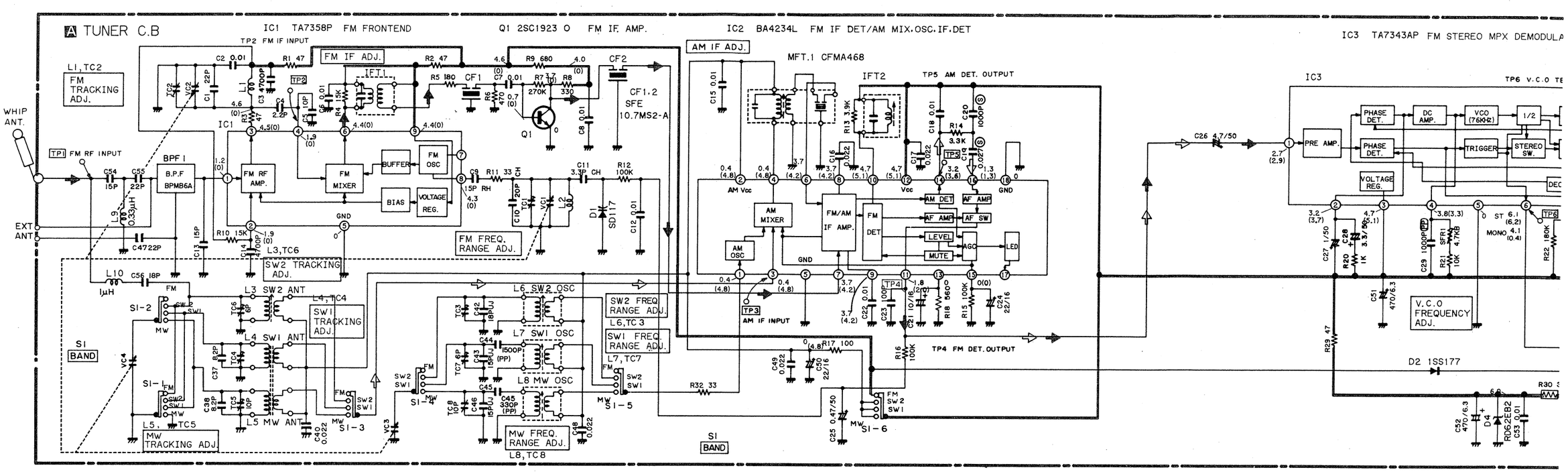
Tape speed:	4.8cm/s±3%
Record bias frequency:	62kHz
Erasing ratio:	More than 50dB
Distortion:	Less than 8%(at REC/PB)
Signal noise ratio:	More than 26dB/More than 26dB (at REC/PB, DC/AC)
	More than 38dB/More than 38dB (at PB, DC/AC)
Noise level:	Less than 30mV(AC, MAX.)
Wow and Flutter:	Less than 0.35%(RMS)
Take up torque:	30~60g-cm(0.3~0.6mN·m)
FF & rewind torque:	55~135g-cm(0.54~1.3mN·m)

2SA1015
2SA1296
2SC945
2SC1923



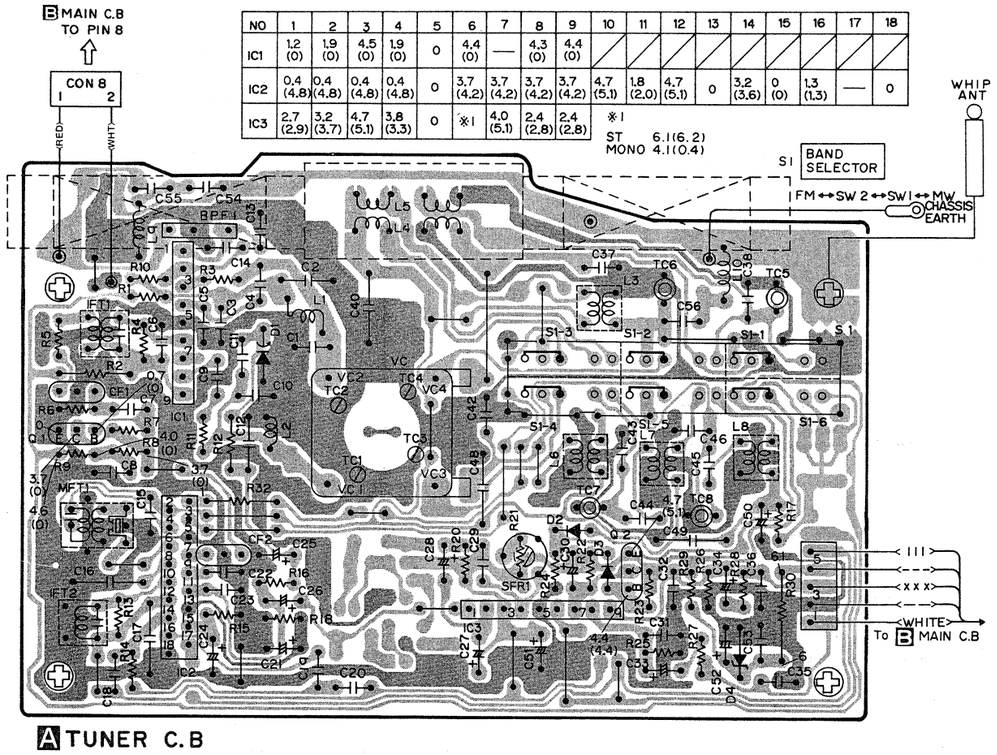
2SC1847

SCHEMATIC DIAGRAM, WIRING—1 (CA-25 H, HU, G)

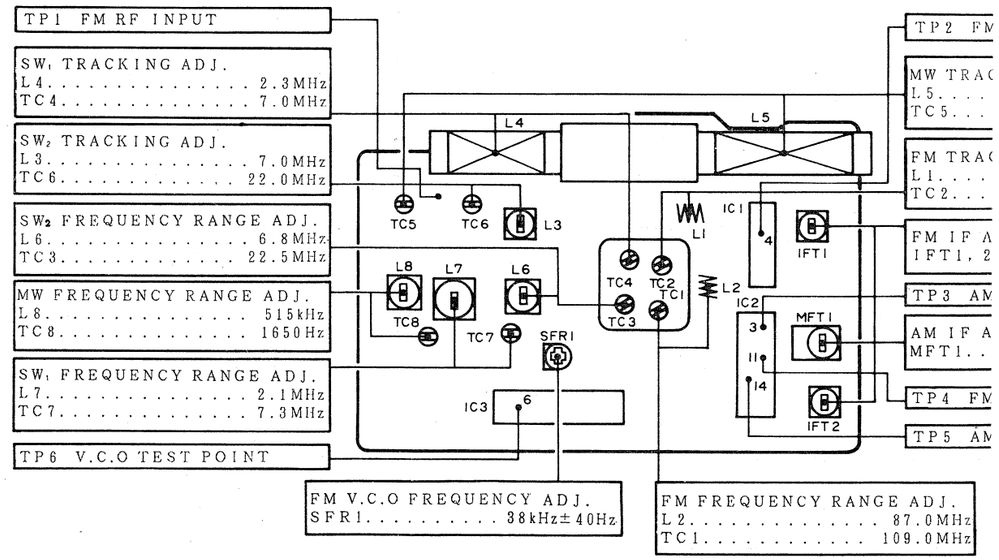


NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
IC1	1.2 (0)	1.9 (0)	4.5 (0)	1.9 (0)	0	4.4 (0)	—	4.3 (0)	4.4 (0)									
IC2	0.4 (4.8)	0.4 (4.8)	0.4 (4.8)	0.4 (4.8)	0	3.7 (4.2)	3.7 (4.2)	3.7 (4.2)	3.7 (4.2)	4.7 (5.1)	1.8 (2.0)	4.7 (5.1)	0	3.2 (3.6)	0 (0)	1.3 (1.3)	—	0
IC3	2.7 (2.9)	3.2 (3.7)	4.7 (5.1)	3.8 (3.3)	0	※1	4.0 (5.1)	2.4 (2.8)	2.4 (2.8)									

※1
ST 6.1(6.2)
MONO 4.1(0.4)

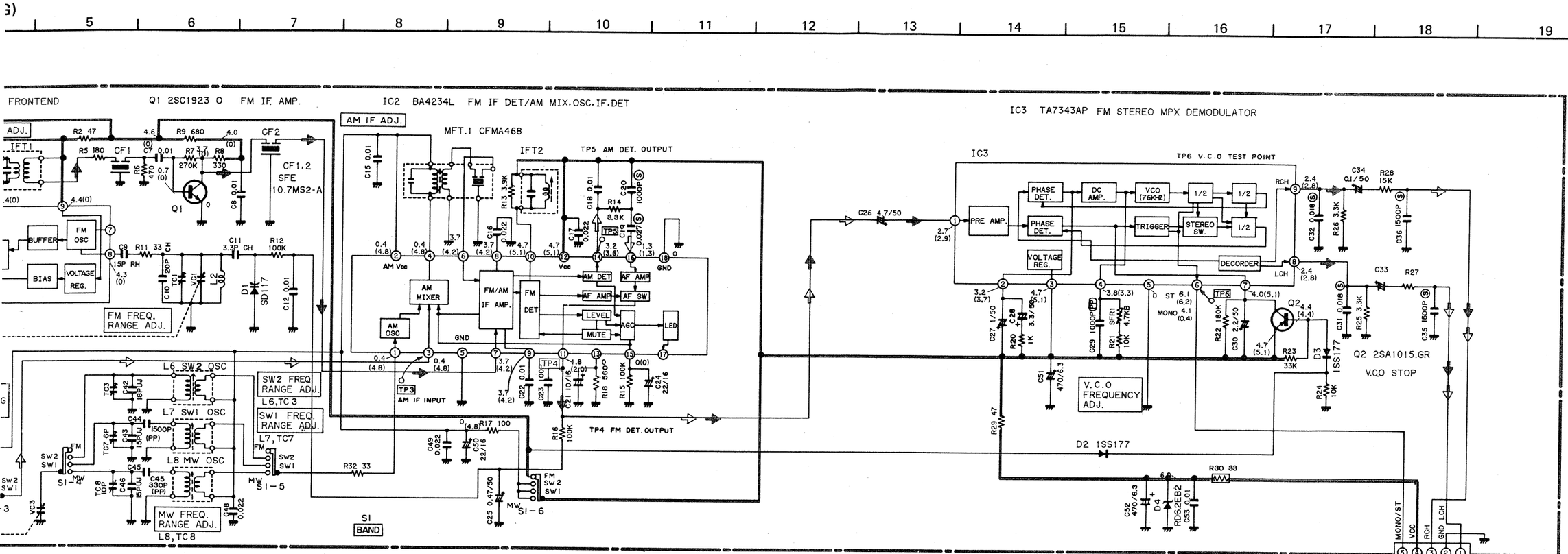


A TUNER C.B


TP1 FM RF INPUT
SW1 TRACKING ADJ.
L4 . . . . . 2.3MHz
TC4 . . . . . 7.0MHz
SW2 TRACKING ADJ.
L3 . . . . . 7.0MHz
TC6 . . . . . 22.0MHz
SW2 FREQUENCY RANGE ADJ.
L6 . . . . . 6.8MHz
TC3 . . . . . 22.5MHz
MW FREQUENCY RANGE ADJ.
L8 . . . . . 515kHz
TC8 . . . . . 1650Hz
SW1 FREQUENCY RANGE ADJ.
L7 . . . . . 2.1MHz
TC7 . . . . . 7.3MHz
TP6 V.C.O TEST POINT
FM V.C.O FREQUENCY ADJ.
SFR1 . . . . . 38kHz±40Hz
FM FREQUENCY RANGE ADJ.
L2 . . . . . 87.0MHz
TC1 . . . . . 109.0MHz
TP2 FM
MW TRAC
L5 . . .
TC5 . . .
FM TRAC
L1 . . .
TC2 . . .
FM IF A
IFT1, 2
TP3 AM
AM IF A
MFT1 . .
TP4 FM
TP5 AM

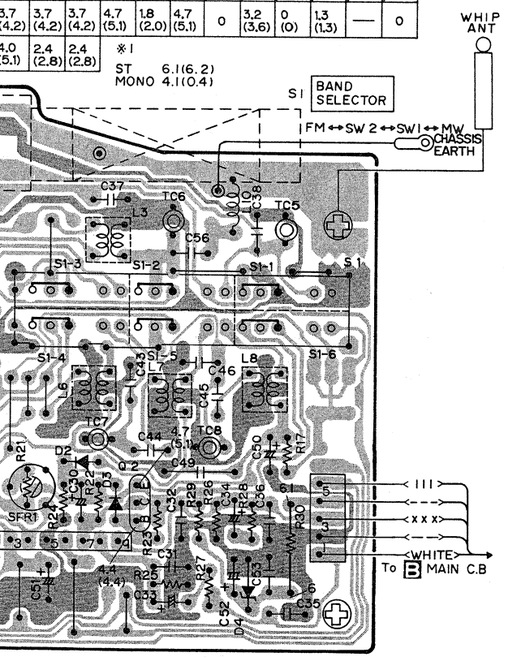
NOTES (1) Earth pattern Others pattern
(2) The voltage is the reference value measured with a tester (20 K ohms/V DC) when there are no signals. But ( ) is with AM reception.

NOTES:
1) B (+) power supply
Signal path
AM signal path

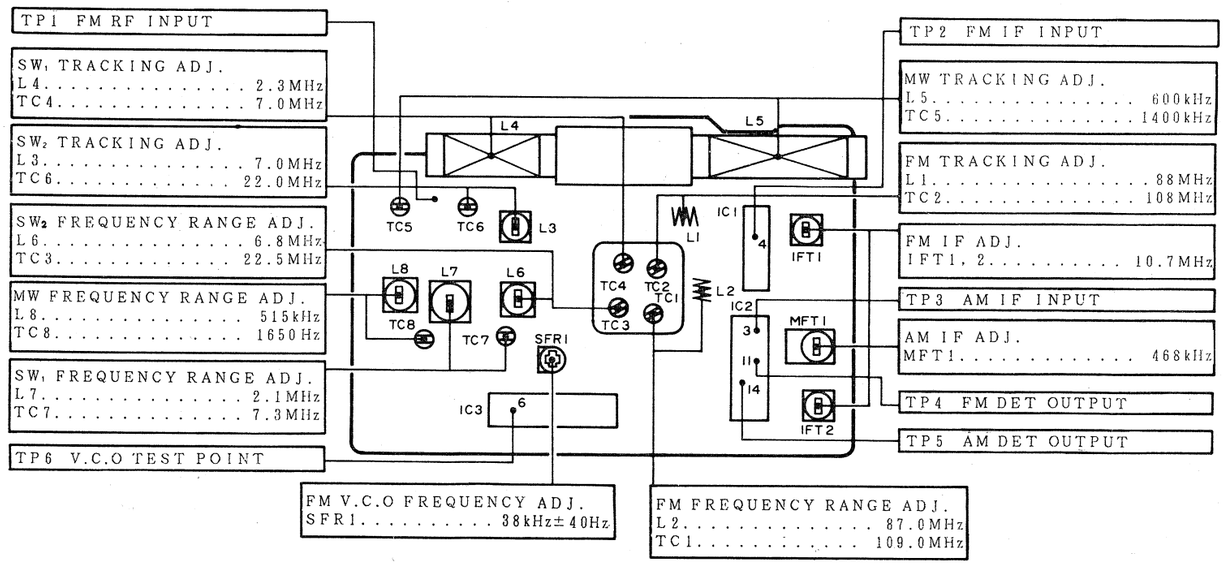


7	8	9	10	11	12	13	14	15	16	17	18
—	4.3 (0)	4.4 (0)									
3.7 (4.2)	3.7 (4.2)	3.7 (4.2)	4.7 (5.1)	1.8 (2.0)	4.7 (5.1)	0	3.2 (3.6)	0 (0)	1.3 (1.3)	—	0
4.0 (5.1)	2.4 (2.8)	2.4 (2.8)	※1								

※1 ST 6.1(6.2)
MONO 4.1(0.4)



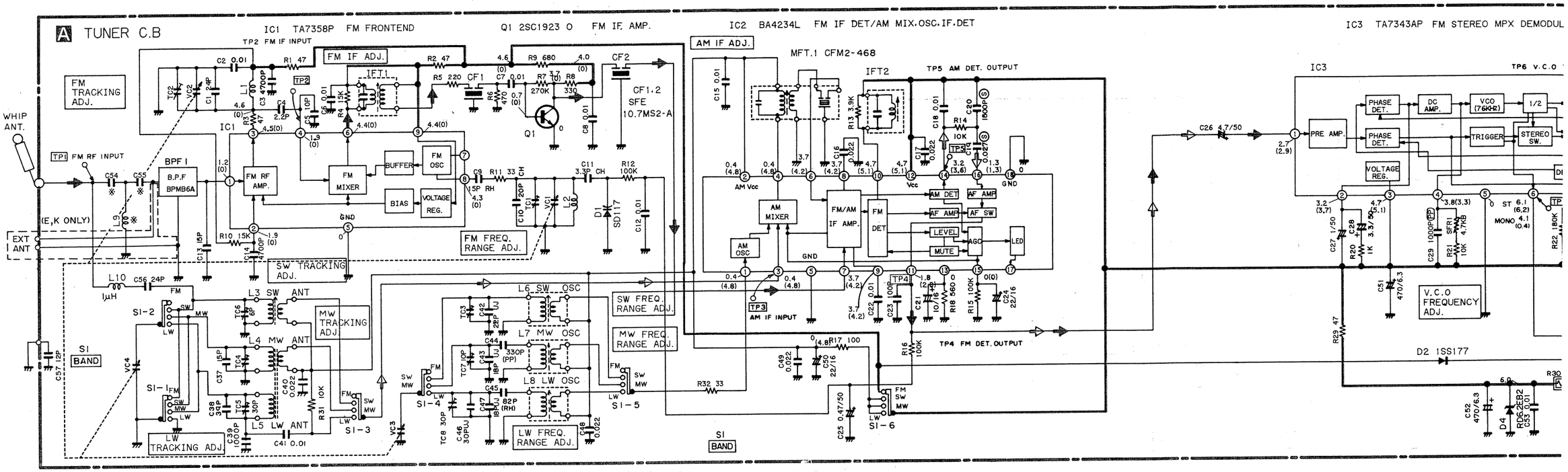
th a tester (20 K ohms/V DC) when there are no signals.


TP1 FM RF INPUT
SW1 TRACKING ADJ.
L4 . . . . . 2.3MHz
TC4 . . . . . 7.0MHz
SW2 TRACKING ADJ.
L3 . . . . . 7.0MHz
TC6 . . . . . 22.0MHz
SW2 FREQUENCY RANGE ADJ.
L6 . . . . . 6.8MHz
TC3 . . . . . 22.5MHz
MW FREQUENCY RANGE ADJ.
L8 . . . . . 515kHz
TC8 . . . . . 1650Hz
SW1 FREQUENCY RANGE ADJ.
L7 . . . . . 2.1MHz
TC7 . . . . . 7.3MHz
TP6 V.C.O TEST POINT
FM V.C.O FREQUENCY ADJ.
SFR1 . . . . . 38kHz±40Hz
FM FREQUENCY RANGE ADJ.
L2 . . . . . 87.0MHz
TC1 . . . . . 109.0MHz
TP2 FM IF INPUT
MW TRACKING ADJ.
L5 . . . . . 600kHz
TC5 . . . . . 1400kHz
FM TRACKING ADJ.
L1 . . . . . 88MHz
TC2 . . . . . 108MHz
FM IF ADJ.
IFT1, 2 . . . . . 10.7MHz
TP3 AM IF INPUT
AM IF ADJ.
MFT1 . . . . . 468kHz
TP4 FM DET OUTPUT
TP5 AM DET OUTPUT

NOTES:

1) B (+) power supply
   Signal path
   AM signal path

SCHEMATIC DIAGRAM, WIRING–2 (CA-25 E, K, Z)

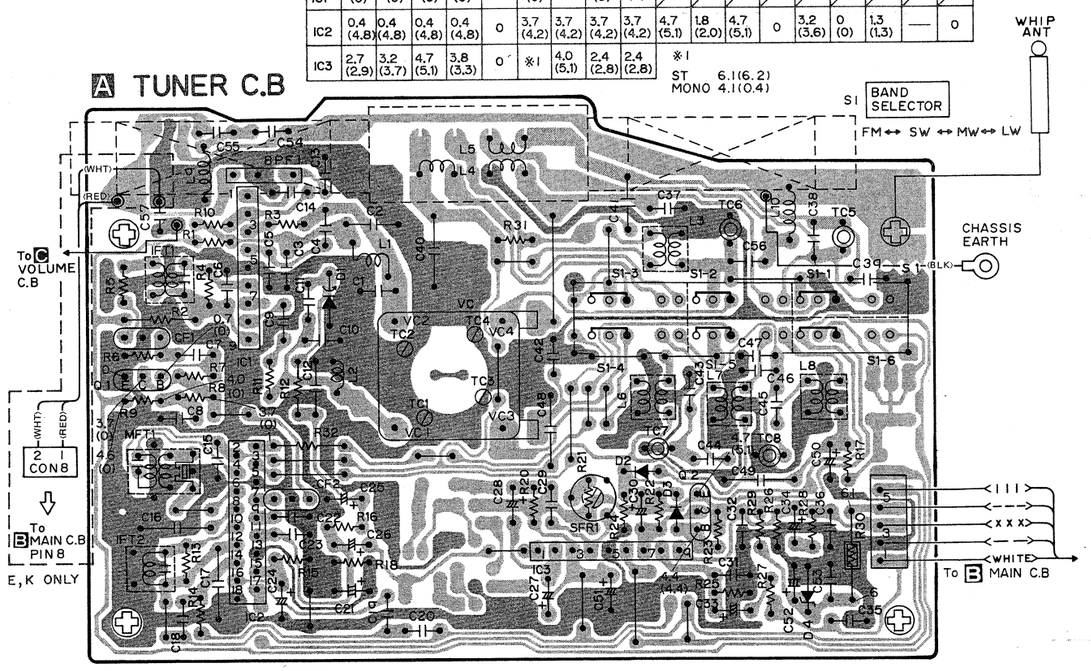


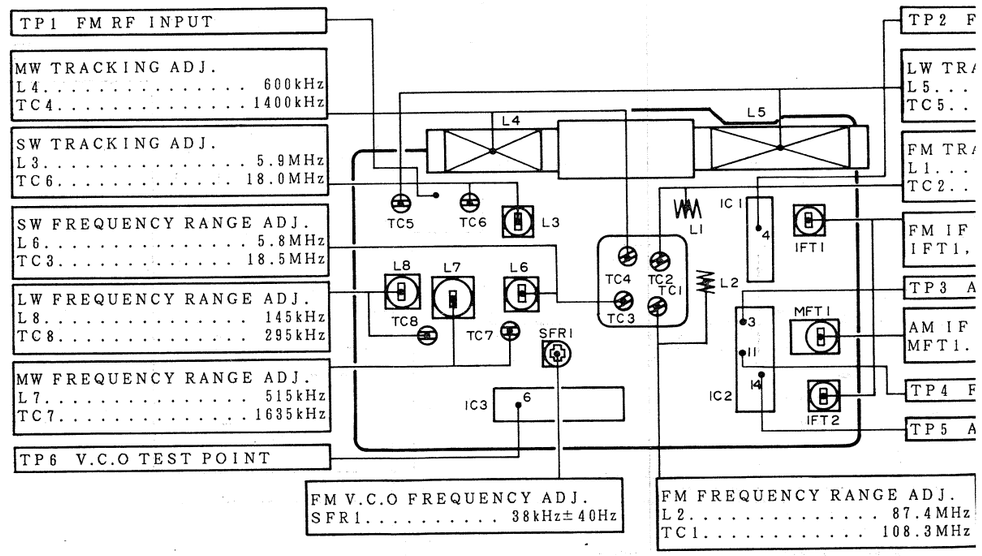
※

	C54	C55	L9
E,K MODELS	15P(S)	27P	0.27μH
Z MODEL	22P	12P	0.33μH

NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
IC1	1.2 (0)	1.9 (0)	4.5 (0)	1.9 (0)	0	4.4 (0)	—	4.3 (0)	4.4 (0)									
IC2	0.4 (4.8)	0.4 (4.8)	0.4 (4.8)	0.4 (4.8)	0	3.7 (4.2)	3.7 (4.2)	3.7 (4.2)	3.7 (4.2)	4.7 (5.1)	1.8 (2.0)	4.7 (5.1)	0	3.2 (3.6)	0 (0)	1.3 (1.3)	—	0
IC3	2.7 (2.9)	3.2 (3.7)	4.7 (5.1)	3.8 (3.3)	0	※1	4.0 (5.1)	2.4 (2.8)	2.4 (2.8)	※1								

※1 ST 6.1(6.2) MONO 4.1(0.4)



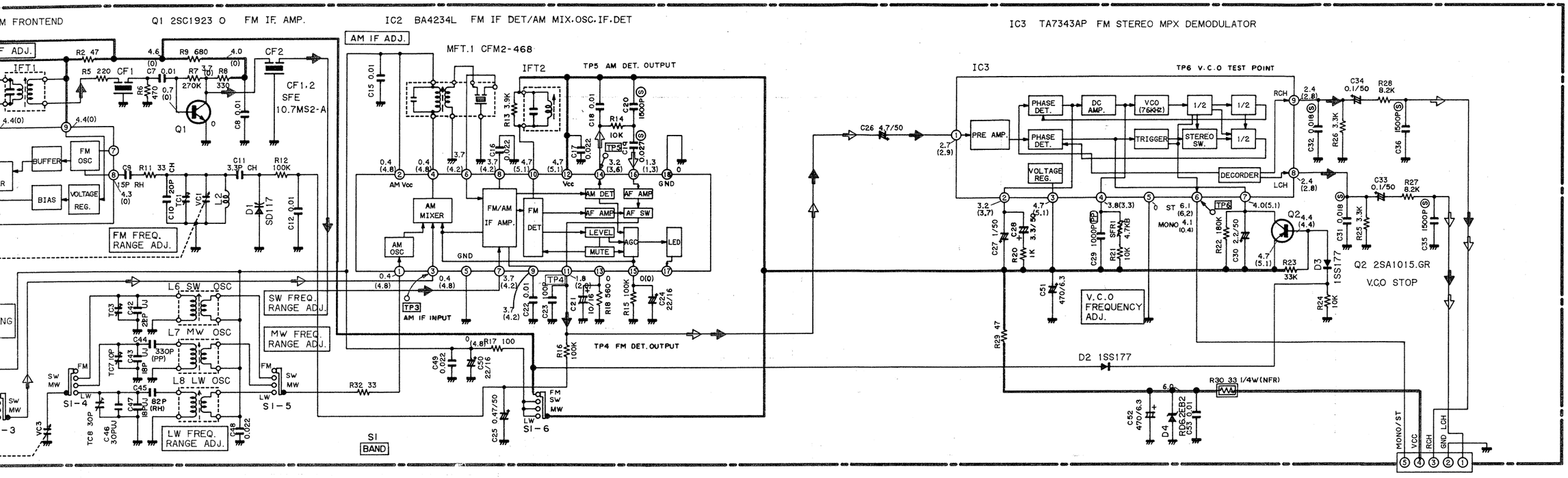

TP1 FM RF INPUT
MW TRACKING ADJ.
L4 . . . . . 600kHz
TC4 . . . . . 1400kHz
SW TRACKING ADJ.
L3 . . . . . 5.9MHz
TC6 . . . . . 18.0MHz
SW FREQUENCY RANGE ADJ.
L6 . . . . . 5.8MHz
TC3 . . . . . 18.5MHz
LW FREQUENCY RANGE ADJ.
L8 . . . . . 145kHz
TC8 . . . . . 295kHz
MW FREQUENCY RANGE ADJ.
L7 . . . . . 515kHz
TC7 . . . . . 1635kHz
TP6 V.C.O TEST POINT
FM V.C.O FREQUENCY ADJ.
SFR1 . . . . . 38kHz±40Hz
FM FREQUENCY RANGE ADJ.
L2 . . . . . 87.4MHz
TC1 . . . . . 108.3MHz
TP2 F
LW TR
L5 . . .
TC5 . .
FM TR
L1 . . .
TC2 . .
FM IF
IFT1.
TP3 A
AM IF
MFT1.
TP4 F
TP5 A

NOTES (1) Earth pattern Others pattern

(2) The voltage is the reference value measured with a tester (20 K ohms/V DC) when there are no signals. But ( ) is with AM reception.

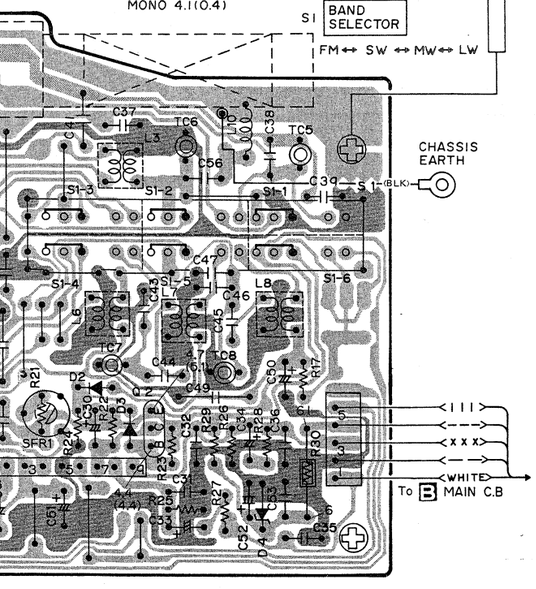
NOTES:

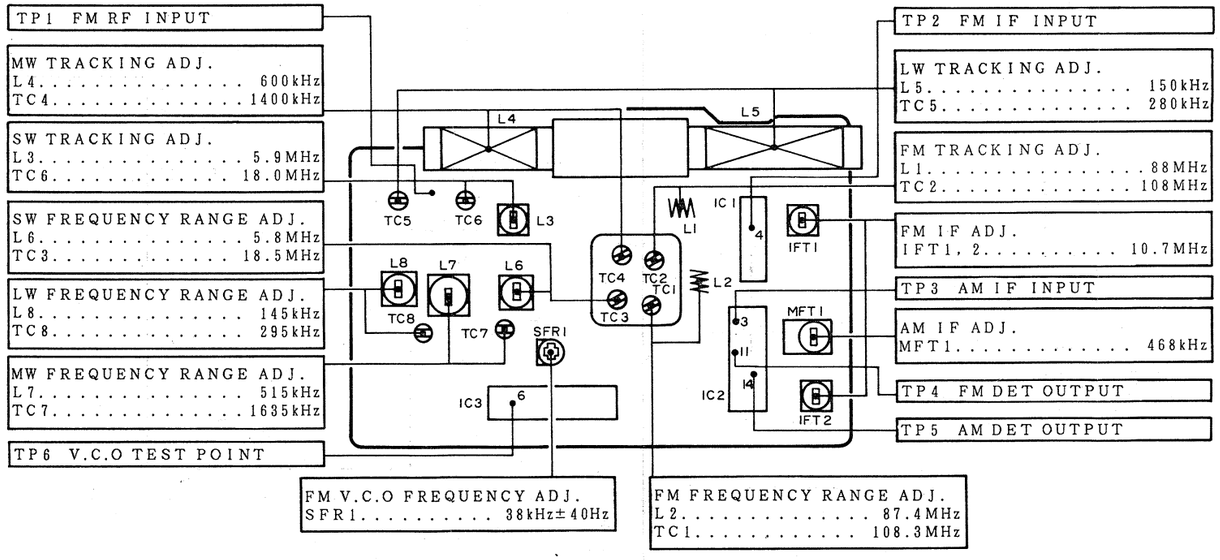
1) B (+) power supply
Signal path
AM signal path



	7	8	9	10	11	12	13	14	15	16	17	18
	—	4.3 (0)	4.4 (0)									
)	3.7 (4.2)	3.7 (4.2)	3.7 (4.2)	4.7 (5.1)	1.8 (2.0)	4.7 (5.1)	0	3.2 (3.6)	0 (0)	1.3 (1.3)	—	0
	4.0 (5.1)	2.4 (2.8)	2.4 (2.8)	※1								

※1 ST 6.1(6.2) MONO 4.1(0.4)

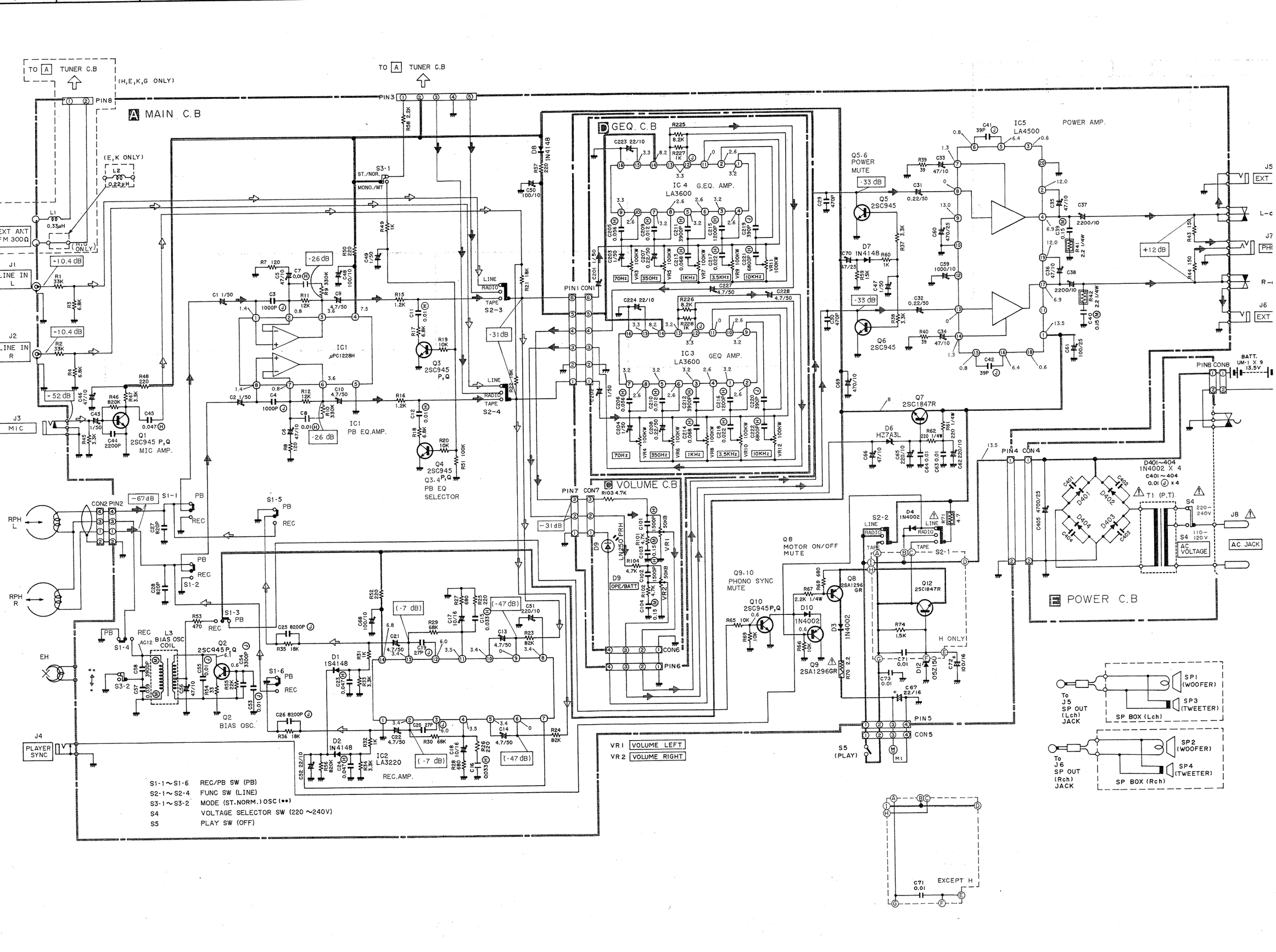


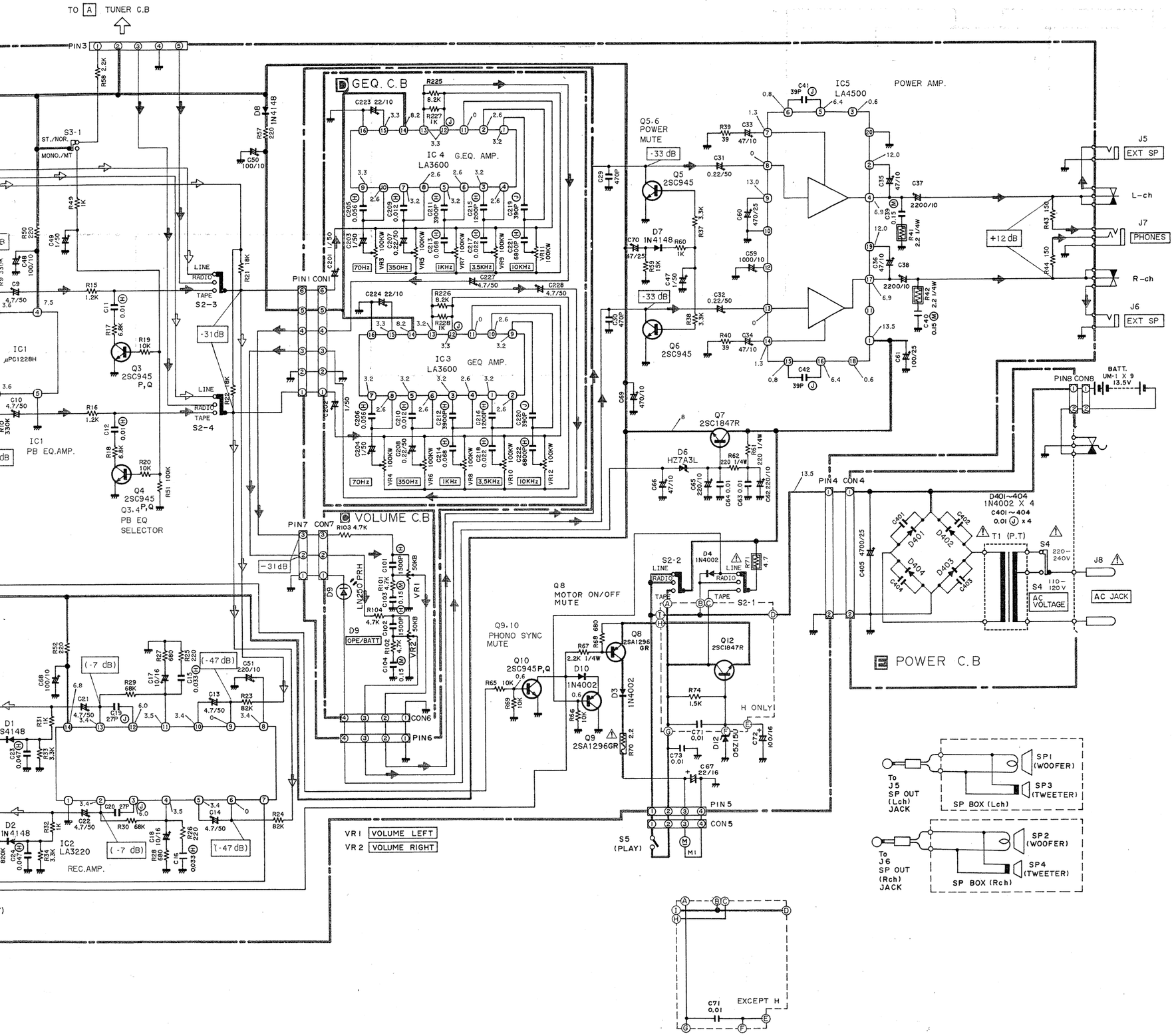

TP1 FM RF INPUT
MW TRACKING ADJ.
L4 . . . . . 600kHz
TC4 . . . . . 1400kHz
SW TRACKING ADJ.
L3 . . . . . 5.9MHz
TC6 . . . . . 18.0MHz
SW FREQUENCY RANGE ADJ.
L6 . . . . . 5.8MHz
TC3 . . . . . 18.5MHz
LW FREQUENCY RANGE ADJ.
L8 . . . . . 145kHz
TC8 . . . . . 295kHz
MW FREQUENCY RANGE ADJ.
L7 . . . . . 515kHz
TC7 . . . . . 1635kHz
TP6 V.C.O TEST POINT
FM V.C.O FREQUENCY ADJ.
SFR1 . . . . . 38kHz± 40Hz
FM FREQUENCY RANGE ADJ.
L2 . . . . . 87.4MHz
TC1 . . . . . 108.3MHz
TP2 FM IF INPUT
LW TRACKING ADJ.
L5 . . . . . 150kHz
TC5 . . . . . 280kHz
FM TRACKING ADJ.
L1 . . . . . 88MHz
TC2 . . . . . 108MHz
FM IF ADJ.
IFT1, 2 . . . . . 10.7MHz
TP3 AM IF INPUT
AM IF ADJ.
MFT1 . . . . . 468kHz
TP4 FM DET OUTPUT
TP5 AM DET OUTPUT

th a tester (20 K ohms/V DC) when there are no signals.

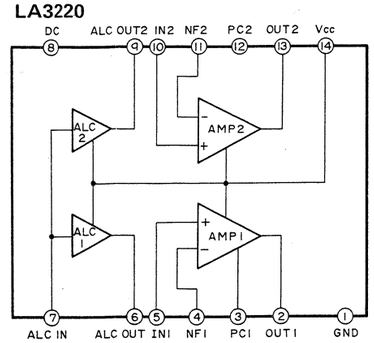
NOTES:
1) B (+) power supply
Signal path
AM signal path

SCHEMATIC DIAGRAM–3 (CA-25 H, HU, E, K, Z, G)

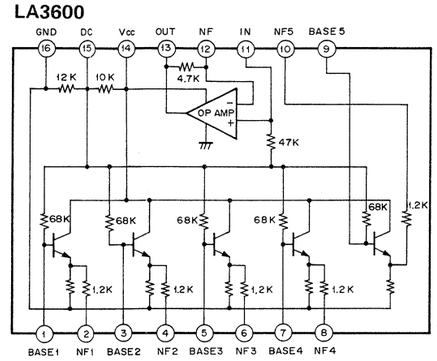




LA3220



LA3600



NOTES:

1) B (+) power supply
2) Signal path
   Rec path, AM signal path
3) The voltage is the reference value measured with a tester (20 k-ohms/V DC) when there are no signals. But ( ) is with AM reception or recording.
4) Resistors with no designation have a rated power of 1/8W and a tolerance of ±5%.
5) Capacitors with no designation have a dielectric strength of less than 50WV.
6) The only capacitor tolerance indicated are ±5% (J) and ±10% (K).
7) Ceramic capacitor symbols:
   - For temperature compensation (SL)
   - High dielectric constant system (YY)
   - High dielectric constant system (YW, YP, YZ)
   - Semiconductor ceramic
   - For temperature compensation (SH)
8) Explanation of symbols
   - (M) Mylar capacitor
   - (A) Aluminum solid capacitor
   - (PP) Polypropylene film capacitor
   - (BP) Bi-polarized capacitor
   - (LL) Low-leakage capacitor
   - Fuse resistor
   - Nonflammable resistor

⚠ Safety component symbol
This symbol is given to important parts which serve to maintain the safety of the product, and which are made to conform to special safety specifications.
Therefore, when replacing a component with this symbol, make absolutely sure that you use a designated part.

- This schematic diagram is subject to change without notice in the interests of improved performance.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

A B C D E F G H I J K

C VOLUME C.B

(E,K,Z ONLY)

To A TUNER C.B

To B MAIN C.B PIN7

CON7

ORG X X X X ORG

D9 OPE/BATT

VR1 VOLUME LEFT

VR2 VOLUME RIGHT

VR1 VR2 R101 R102 C101 C102

81-561-620-11

SHIELD PLATE

BLK

(H,E,K,G ONLY)

EXT ANT. FM 300Ω

E.K ONLY L2

L1

H G ONLY

ORG BLK RED WHT

CON6

To MAIN C.B PIN6

PIN8

B MAIN C.B

J6 EXT SP. R

J3 MIC

J2 LINE IN R

J1 LINE IN L

J4 PLAYER SYNC

J5 EXT SP. L

PIN7

PIN1

PIN2

PIN3

PIN4

PIN5

PIN6

IC1 IC2 IC3 IC4 IC5

TC5

Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Q12 Q13

D1 D2 D3 D4 D5 D6 D7 D8 D9 D10 D11 D12

S1 (REC/PB)

S2-1 S2-2 S2-3 S2-4

LINE IN (CD)

RADIO

TAPE POWER STAND BY

S2 FUNCTION

S3-1 S3-2

S3 STEREO OSC NORMAL MONO METAL CrO2 (PB)

S3 FM MODE/TAPE

J7 PHONES

GND

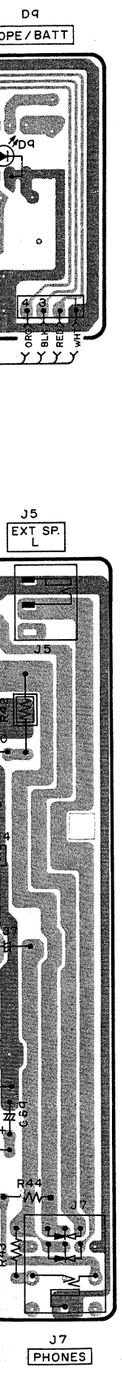
To A TUNER C.B PIN3

CON3

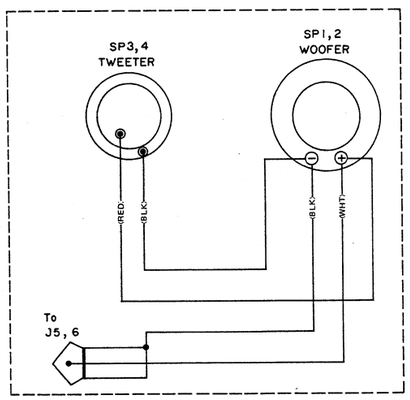
81-561-61-01

CON1

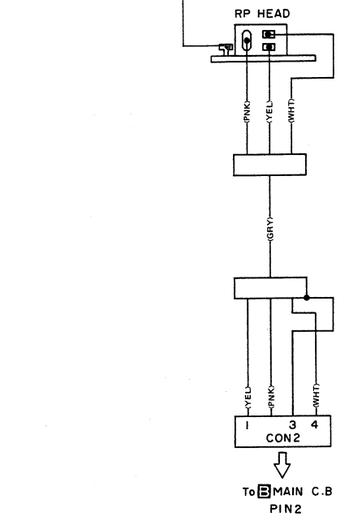
To B MAIN C.B PIN1



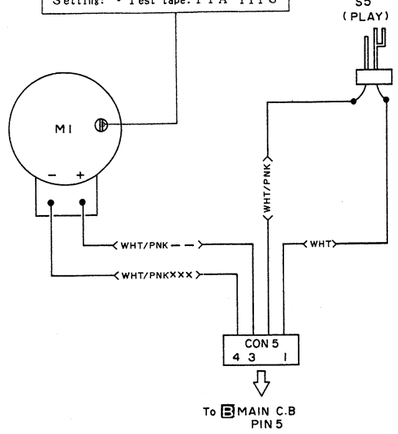
B GEQ C.B

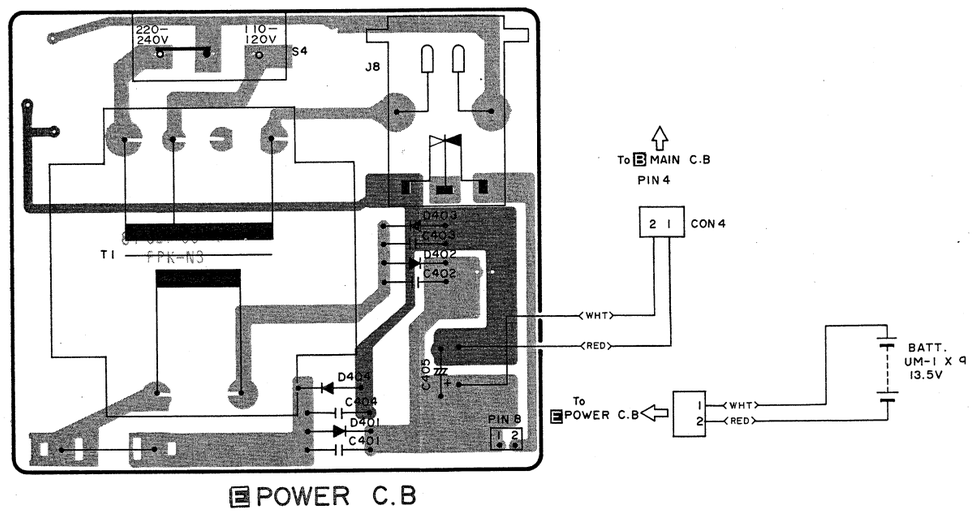


1. Azimuth Adjustment
Settings: • Test tape: TTA-113B
• Adjustment location: Azimuth adjustment screw



2. Tape Speed Adjustment
Setting: • Test tape: TTA-111S





E POWER C.B

NOTES (1) Earth pattern Others pattern
(2) The voltage is the reference value measured with a tester (20 K ohms/V DC) when there are no signals.